THE IRON AGE

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The Piping of the Gary Works.

The largest single contract of its kind ever let was that of the piping for the Gary Works of the Indiana Steel Company, which was awarded to the Best Mfg. Company, Pittsburgh, Pa. The piping ranges in size from ⅜ to 50 in. and includes the fitting up complete of the following, including all auxiliaries:

Eight 450-ton blast furnaces; 12 gas washers; 16 Rust boilers: eight 42 x 54 in. Westinghouse gas blowing engines; two extra steam blowing engines; nine 2000-kw. generators, each driven by two twin tandem direct connected Allis-Chalmers gas engines; two Curtis steam turbines; one pig casting plant, consisting of six machines; two open hearth plants, with 14 60-ton stationary furnaces in each; 140 10-ft. hand poked gas producers (five producers for each open hearth furnace), and a central pumping station.

The total weight of the material required was 5000 tons; 200 cars were necessary for its transportation, and 25 miles of pipe alone were used in the construction of the various lines.

Live Steam Piping.

From the tops of the 16 boilers 8-in. U-bend connections are made to a 15-in. main steam header; a gate valve and a non-return valve are placed in each connection. The 15-in. header runs the entire length of the boiler room, at one end reducing to 12 in. and continuing 12 in. into open hearth No. 4, where connections are made to the gas producers. At the other end of the 15-in. header a reduction to 12 in. is again made, the 12-in. line running into the south end of the blowing engine room, where connections are made to the boiler feed pumps, centrifugal pumps and hydraulic pumps. From here the line continues 12 in. through a 30-in. receiver separator to two 2000-kw. steam turbines. At this point a reduction to 8 in. is made and the line continues 8 in. into open hearth No. 3.

Near the center of the 15-in. main in the boiler room a 12-in. connection is taken into the blowing engine room, supplying steam to the two steam driven blowing engines.

The valves used on the above steam lines were extra heavy gun iron, 12 in. and over, being by-passed. The fittings are extra heavy flanged, for 250 lb. pressure. The flanges are extra heavy rolled steel, expanded on the pipe and refaced in a lathe after being attached to pipe. Standard steel pipe is used on all steam lines 8 in. and over. For sizes 6 in. and under the pipe is extra strong. All joints are made with Klingerit gaskets and hexagon head and nut bolts.

Boiler Feed Piping.

From the feed water heaters the feed pumps take the water and discharge into an 8-in. line, which reduces first to 7 in. and then to 6 in. before running into a 6-in. header in front of the boilers. From this 6-in. header 2½-in. connections are taken into the boilers, globe and check valves being supplied in each line. The material for these lines is of the same class as used for the steam lines, except that the pipe is extra strong wrought iron instead of standard steel, and the gaskets are Wilcox self-sealing.

Blow-Off Piping.

From each boiler a 3-in. blow-off line is taken into an 8-in. header, which runs the entire length of the boiler room, to a 4-ft. diameter by 11½-ft. high blow-off tank. The vent for this tank is 18 in. in diameter. The fittings and pipe used in this line are standard cast iron flanged for 100 lb. pressure.

Exhaust Pipe From Steam Driven Apparatus.

The exhaust from the hydraulic pumps is taken through a 20-in. main to the condenser, while the exhaust from the feed pumps is taken to the feed water heater through a 10-in. line. The vent from the heater is 10 in. and is taken to a 13-ft. diameter smokestack. The fittings and valves used in these lines are standard cast iron for 100 lb. pressure. The pipe is standard steel, with cast iron flanges expanded on for sizes 8 in. and over. For sizes under 8 in. the flanges are screwed on.

Hydraulic Lines.

From the hydraulic pumps located in the south end of the blowing engine room 12-in. connections are made through 12-in. cast steel by-passed Best adjustable wedge gate valves* to a 14-in. cast steel header of heavy construction. From one end of this header a 10-in. connection is taken to the southwest corner of the electric power station and there blanked. This line is to be used for open hearth plants Nos. 1 and 2. Out of the above 10-in. line in the blowing engine room a 6-in. connection is made to the accumulator.

From the other end of the 14-in. cast steel header a 10-in. line is taken to a point near the skull cracker for open hearth No. 4. Here the 10-in. line is divided into two 8-in. lines, one leading to open hearth No. 3 and one to open hearth No. 4. Inside of the open hearth buildings 6-in. mains run the entire length of the buildings. From these 6-in. mains 2½-in. connections are made to 28 manifolds, each having six 1-in. outlets. On these manifolds are bolted the three-way and four-way operating valves. From the outlets of these operating valves a network of 1-in. pipe is run to the various cylinders for operating the furnace doors and gas and air valves. It required 5 miles of 1-in. extra strong pipe alone for fitting up these open hearth furnaces.

The valves on these lines are Best adjustable wedge gate valves, outside screw and yoke, with one-piece bronze stem, the bodies being made of semi-steel for sizes 8 in. and under, and cast steel for 10 and 12 in. The 10 and 12 in. valves are by-passed. All pipe, except the 14-in. header at the pumps, which is cast steel, is extra heavy wrought steel pipe, with forged steel male and female flanges screwed on. All flanges are refaced in a lathe after being attached to the pipe. All fittings are made of cast steel of a heavy design for 1000 lb. working pressure.

All joints are made with vulcanized fiber gaskets, ⅛ in. thick, and hexagon head and nut bolts.

Air Lines.

The compressed air lines used for starting the gas blowing engines and electric engines are designed for 275 lb. working pressure. The main headers for these connections are 30 in. in diameter, and are 444 ft. 8 in. long in the blowing engine room and 439 ft. 6 in. long in the engine room.

The pipe used in these lines is lap welded pipe 9-16 in. thick. The flanges are rolled steel and are attached by the Van Stone method—that is, the end of the pipe is turned over on the face of the flange so that the joint is made with pipe against pipe.

The outlets for the engines were made by welding cast steel necks to the 30-in. header, and instead of using blind flanges at the ends of the headers, dished heads were welded on. The outlets for the engines were made 4 in. for the blowing engines and 5 in. for the electric engines. On these outlets were placed extra heavy flanged Best adjustable wedge gate valves, outside screw and yoke, with one-piece bronze stem.

Large Gas Engine Exhaust Lines.

The exhaust from the gas blowing engines is made of 24-in. cast iron pipe, designed for 100 lb. pressure. This line conducts the exhaust gases to a large muffler, built of concrete.

The exhaust from the gas electric engines is conducted through a 32 x 18 in. reducing fitting, the 18-in. end of which is fitted with a slip expansion joint to take care of expansion. From these 32-in. fittings the exhaust gases are conducted to a 50-in. exhaust main, each engine hav-

* Described in *The Iron Age*, February 6, 1908.

ing a separate main which reduces to 24 in. before entering the above mentioned muffler.

For making the joints on these exhaust lines a paste was used, composed of red lead, black oxide of manganese, boiled linseed oil and white lead. It was found upon experiment that the above composition would stand the excessive heat to which these lines are subjected better than a fibrous or metallic gasket. The gas inlet piping for the above engines is made of riveted steel pipe, with cast iron flanges riveted on.

Water Lines.

The water lines for this vast works are so extensive and complicated that it would be useless to go into a description of them without a detailed drawing for illustration. Water is distributed to every conceivable point in the plant, through branches which originate in a 42-in. main at the central pumping station.

The underground water piping is an immense system in itself, requiring about 7 miles of pipe, ranging in size from 1½ to 42 in. The main header in the central pumping station is made up of 42-in. cast steel flanged pipe and fittings, the metal in the body being 1⅜ and the flanges 2 in. thick. The 36-in. pipe is of the lock bar type, made up of 7-16-in. plates. Pipe 30 in. and under is wrought, of National Tube Company's manufacture. All underground pipes are tar coated inside and out, pipes being first heated to a temperature of about 200 degrees and then dipped vertically in a solution of pure coal tar heated to 360 degrees.

Flanges are of rolled steel, shrunk and pieced to the pipe, and then refaced in a lathe, thus insuring the faces of the flanges being perpendicular to the center axis of the pipe. Gaskets used are lead, 1-16 in. thick, and the outside circumference is tangent to the inner edges of the bolt holes.

The valves throughout are Best adjustable wedge gate valves of the outside screw and yoke type, with one-piece bronze stems, the same as adopted by the National Tube Company at McKeesport and the Youngstown Sheet & Tube Company at Youngstown and many others.

A Notable Paper Mill Heating Installation.

The Anglo-Newfoundland Development Company, Grand Falls, Newfoundland, is installing in its new buildings a heating equipment remarkable for its extent and capacity, furnished by the American Blower Company, Detroit, Mich. The four sets of apparatus, each consisting of a steel plate fan with direct connected engine and heater, are together capable of delivering 267,000 cu. ft. of air per minute. For heating the air to the proper temperature, 13,827 sq. ft. of cast iron indirect radiation is required, and about 25 tons of galvanized steel sheets was used for the ducts and flues distributing the air.

The finishing room, mill supply room, roll grinding room and machine shop are to be heated to 70 degrees F. when outside temperature is zero, using entirely fresh air. Ten to 20 min. air changes are required for the various rooms. These requirements call for a three-quarter housed fan, having an 8-ft. blast wheel, driven by a 9 x 7 in. inclosed self-oiling type A engine. The fan exhausts fresh air through 10 sections of No. 14 Vento radiation 60 in. high, delivering through galvanized conduits to the various rooms.

The part of a paper mill requiring the most particular attention so far as heating is concerned is the machine room. Experience has shown that enough heat to keep moisture or fog in suspension, and enough circulation of air to carry off that moisture, can be best obtained with the blower system. The prevention of condensation collecting on the ceiling of roof trusses is most important.

For heating the machine room, beater room and pump room, 70 degrees F. in zero weather is required, and air changes of 10, 20 and 30 min., respectively. There will be employed a full housed steel plate fan having a 13-ft. blast wheel of Guibal type, directly connected to a 13 x 16 in. horizontal side crank engine and exhausting through 20 groups of No. 19 Vento radiation 60 in. high. About 25,000 lb. of galvanized iron is used for the air distribution system connected to this apparatus alone.

The screen room will be heated to 70 degrees in zero weather and air changed every 20 min. by a steel plate fan having a 9-ft. blast wheel directly connected to a 10 x 12 in. horizontal side crank engine and exhausting from out of doors through 2684 ft. of Vento radiation. The air will be distributed through a simple system of galvanized conduits.

Another complete apparatus will be used to heat the generator room to 60 degrees F., the grinder room to 70 degrees F., and several lower floors to 70 degrees F. in zero weather, and effect 10, 25 and 30 min. air changes, respectively. This apparatus will consist of a special full housed steel plate fan set three-quarter housed style, with an 8-ft. blast wheel, and directly connected to a 9 x 7 in. type A inclosed self-oiling engine. The heating surface is made up of one No. 16 section and seven No. 17 sections of Vento radiation, 60 in. high.

The American Blower Company has specialized in paper mill requirements and is at present under contract with the International Paper Company, New York, for heating and ventilating equipment for the Otis Mill, at Livermore Falls, Maine, and the Ontario Mill, at Brownsville, N. Y.

A Gas Power Cost Record.

Interesting data relative to the cost of power for factory operation derived from producer gas is afforded in a report received from the John Thomson Press Company, 253 Broadway, New York City. It covers the cost of power at its factory at Long Island City for the year 1908. The plant consists of a Taylor suction producer with Tait's improvements and Nash gas engine. The plant was operated 196.3 9-hr. days at about half capacity, which the president of the company credits to the "Roosevelt panic."

During the year the plant consumed 191,550 lb., or 95.77 tons of anthracite coal costing $4 a ton, making the total $383. The labor during the same time cost $685 and supplies $262, making a total cost in the plant of $1330. The output in electric current was 37,993 ampere hours at a voltage of 240, which represents a total of 12,218.55 hp. hours. The hours of operation being 1767, the average horsepower per hour at the switchboard was 69.15. The total cost divided by the total hours gives 75.2 cents as the cost of power per hour, and 1.09 cents as the cost of power per horsepower hour. The coal consumed per hour was 108.46 lb., or 1.56 lb. of coal per horsepower hour, which includes the coal used for carrying the producer from night until morning, amounting to about 150 lb. per night.

From the above data the conclusions are drawn that the cost of the same average of power for 300 9-hr. days would be approximately $29 per horsepower year. About 15.5 per cent. of the coal was used for carrying the producer overnight. The demand for power in this plant fluctuates frequently and widely, 20 to 30 per cent., owing to the throwing in and out of various tools; hence the conditions of operation are severe. The company believes that it may be regarded as practically established that if the plant was operated fairly uniformly at about normal full load, say 120 hp. at the switchboard, with coal at $4 per ton, the cost per horsepower hour should not exceed 0.8 cent, that is $24. per horsepower year of 3000 hr., or if run continuously for one year of 8500 hr. on a fairly uniform maximum load the plant appears capable of delivering 1 hp. at a cost of not exceeding $50, which is equal to 0.58 cent per housepower hour, or 0.43 cent per kilowatt hour. The voltmeter and ammeter from which the original readings were taken at frequent intervals each day, were recently tested and found to be correct.

Immigrant arrivals at New York in the week ending February 20 numbered 22,724, the largest week's record since the panic of 1907. From the beginning of the year to the end of the third week in February the arrivals were 73,627 this year, or 45,999 more than for the same period last year. The departures of steerage passengers in this period were 20,485 this year, as against 99,132 last year.

Alliance Open Hearth Charging Machines.

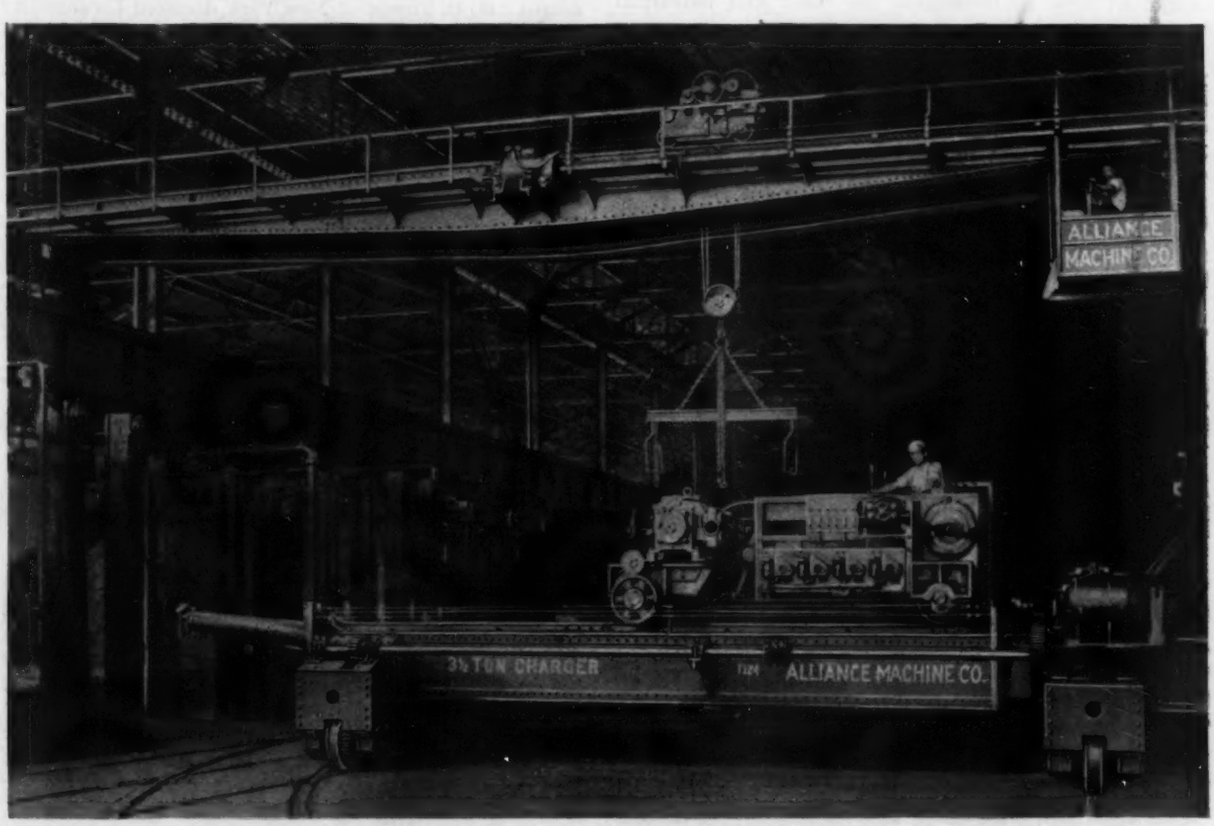
Unusual construction and dimensions characterize two floor type charging machines installed in the open hearth department of the Pittsburgh Steel Company, Monessen, Pa., by the Alliance Machine Company, Alliance, Ohio. The accompanying engraving shows quite clearly the general features of the machine, which is of all steel construction, and also its relation to the furnaces and charging floor.

It will be noticed that the girders forming the bridge of the machine are well above the charging floor, hence the machine will readily pass over the various articles which are usually found on the charging floor; in fact, it will pass over a barrow of the sort used in open hearth plants. Owing to the great size of the furnaces, the distance between the furnace walls being 16 ft., and, further, to the fact that a clear space of 9 ft. 10½ in. must be left in front of the furnaces, it was necessary to design the machine not only with a great reach but also with a maximum possible carriage travel which could be secured on a bridge of 24½-ft. span. Both these objects were fully attained by designing the machine so that the four supporting wheels of the carriage run on rails located on top of the bridge girders, and, further, providing the carriage with a pair of wheels adapted to engage inverted rails so as to take care of any up thrust at the rear end of the trolley.

The maximum reach of the machine—that is, the greatest distance from the track rail nearest the furnace to the end of the charging box on the end of the peel—is 28 ft. Such a reach is quite exceptional, but owing to the massive construction throughout no trouble is experienced even when pushing a long line of loaded charging buggies with the end of the peel. The carriage travel is 19 ft. 1 in.

The girders and end carriages are built up of structural shapes, and strongly reinforced, braced and framed together to meet the severe racking strains to which charging machines are necessarily subjected. The trolley is of all steel casting construction and is designed so as to make all working parts easy of access. Shaft bearings are provided with tongued and grooved caps, and the operator is so located as to have an unobstructed view of his work. Both the bridge and trolley wheels are keyed to their axles and run in bearings similar to the Master Car Builders' type, equipped with boxes for holding oil and waste. The bridge is operated by two 30-hp. motors, one mounted on each side of the bridge, thus requiring two bridge line shafts and positively driving all four bridge track wheels. This provides the best possible conditions for a machine which is frequently called upon to act the part of a locomotive in pushing a line of loaded charging buggies.

The machine is designed to handle a 7-ft. charging box. The speeds are as follows: Hoisting, 60 ft. per minute; carrriage travel, 200 ft. per minute; bridge travel, 250 ft. per minute, and the charging box is rotated at a speed equal to 35 rev. per min.



One of the Two Alliance Floor-Type Charging Machines Installed in the Open Hearth Department of the Pittsburgh Steel Company at Monessen, Pa.

American Blower Engines for Panama.

A shipment of unusual note has recently been made to the Isthmian Canal Commission, Colon, consisting of seven 2½-kw. generator sets. These engines were built to meet the commission's requirements, which called for them to be "built for high speed, self-oiling and automatically governed, and to be able to control and also strong enough to withstand a change from no load to full load," &c. The Fort Wayne Electric Works, Fort Wayne, Ind., being awarded the contract, furnished and shipped to the American Blower Company's Detroit plant the seven type M. L. frame D 110-volt generators for mounting upon the extended sub-bases of the seven 3¼ x 3 A. B. C. vertical inclosed self-oiling type A engines. The combined sets were tested and inspected by a Government inspector and readily approved.

The feature that particularly interests the officials is the fact that these engines will operate continuously at high speeds for long periods without attention. This is rendered possible by the patented system of lubrication employed. At the base of the engine is located a small pump, which delivers to each moving part a copious stream of oil. Every frictional surface literally runs on oil, there being no possible contact between metals. The engines will run successfully anywhere that a steam pipe can be carried. While fully inclosed, the loosening of a single milled hand nut removes the inclosing panel and gives free access of all working parts.

The Tariff Commission Convention.

The Tariff Commission convention, held in Indianapolis February 16 to 18, attracted a great deal of interest. Those in attendance represented business and civic bodies of all kinds and from all sections of the country. James W. Van Cleave of St. Louis, president of the National Association of Manufacturers, was elected permanent chairman and made a stirring address, disclaiming any intention of favoring a commission that would usurp the constitutional powers of Congress and frame tariff bills. After urging immediate revision of the present tariff, he said: "Let Congress and President and people decide for protection or free trade; let Congress and President divide the dutiable from the free list and establish the scale of rates, but let us have for tariff legislation, as for other legislation, some official, impartial, dispassionate source of information, secure from political influence, with sufficient ability, and, above all, sufficient time to investigate the fiscal and industrial needs of our people."

Numerous speakers addressed the convention, some of them most effectively, but one of the best addresses made was that of Henry R. Towne, president of the Merchants' Association of New York, on "The Neutral Line—A Plea for Scientific Regulation of the Tariff," a portion of which will be found elsewhere in this issue. Resolutions were adopted as follows:

We demand from Congress, for the equal benefit of all classes of the people, and in the name of all American industry, of farm, factory, labor and commerce, represented in the National Tariff Commission Convention, held at Indianapolis, consisting of delegates from 42 States and representing 223 agricultural, civic, commercial and industrial bodies, the immediate creation of a permanent tariff commission for the following purposes and ends through Congressional action:

1. The collecting and intelligent, thorough and unprejudiced study of tariff facts.
2. The development and enlargement of our foreign trade.
3. The accomplishment of this by reciprocal trade agreements based on maximum and minimum schedules.
4. The adjustment of the tariff schedules so that they shall affect all interests equitably.
5. The fixing of the rates of duty to be paid on the imports from any foreign country within the limits of the maximum and minimum rates established by Congress under reciprocal trade agreements negotiated by or under the direction of the President, in order thereby to develop and protect our foreign trade by the means favored by President McKinley, and authorized by sections 3 and 4 of the Dingley law.

For the purpose of disproving the charge that the design of the tariff commission movement was to delay indefinitely the revision of the tariff, the convention adopted the following:

We urge that, prior to the passing of a bill creating such a commission, Congress, during its special session, about to be called, shall prepare and adopt, with the assistance of the best information presently available, a revised tariff as completely and accurately adjusted to present conditions, and therefore as stable as is possible at this time.

That the work of the convention should not merely consist of the passage of resolutions was shown by the declaration made in favor of a permanent organization, as follows:

Resolved, That to provide for a permanent organization to carry into effect the conclusions of this convention, the chairman shall appoint a committee of 100, of which not less than two shall be appointed from each State, with the temporary and permanent chairman of this convention as members *ex-officio*, from which committee the chairman of this convention shall designate an Executive Committee of nine members, and the chairman of the convention shall be an *ex-officio* member of that committee. We make this demand because:

1. The tariff is our largest national tax, yielding $330,000,000 in the fiscal year 1906-07.
2. This tax falls on all classes and concerns all the people.
3. While it favorably affects the rates of wages it influences the cost of living, and, therefore, the purchasing power of wages.
4. It directly affects the cost of production, and, therefore, our ability to compete in foreign markets.
5. The problem is vast and complex, and vitally affects all industry and commerce.
6. The present method of tariff regulation is crude, unscientific and outgrown.
7. It imposes on Congress technical work in which its members have had little or no previous training and experience, and which, therefore, they should not be required to perform.
8. It results in unnecessary, unreasonable and unfair discrepancies and errors.
9. It perpetuates such errors for long periods, involves intermittent revision and tends to violent changes of policy.
10. The commission plan will substitute a scientific method which will establish the neutral line of maximum benefits and minimum evils to all interests.
11. It will accomplish this by a governmental agency, properly equipped to furnish Congress with the vast amount of cumulative technical data required to assist it, both in framing legislation based thereon and in forecasting the results of such proposed legislation.
12. It will enable Congress to obtain full and reliable information as to facts, and to concentrate its time and efforts on constructive legislation based on such facts.
13. It will obtain accurate information enabling our executive department to intelligently negotiate commercial agreements for the increase and extension of our foreign trade.
14. It will promote the prosperity of the country and the larger employment of American labor by encouraging the conversion of our raw material into finished products before their export to foreign markets.
15. It will provide for the prompt correction of errors in the tariff and a recognition of changing conditions.

The chairmen of the permanent organization of the convention selected by Chairman Van Cleave are: H. E. Miles of Racine, Wis., of the Executive Committee, and John Herbert, Jr., of Dayton, Ohio, of the Finance Committee. H. R. Towne of New York declared his inability to serve as chairman of the permanent organization and J. W. Van Cleave was chosen by the convention.

Nova Scotia Coal Producers Ask More Protection.

TORONTO, February 20, 1909.—Mr. Fielding, Canadian Minister of Finance, was not many hours in his home city of Halifax on his way back to Ottawa from his borrowing mission in London and his treaty making business in Paris until he had a visit from a deputation of Nova Scotia coal mine owners, accompanied by the Premier of the Province. Their errand was to lay before him a petition, and representation in support thereof, for an increase in the coal duty. It was pointed out that there has been a falling off in shipments for Nova Scotia coal to Quebec Province, and it was alleged that the reason for this was the competition of cheaper grades from the United States.

That the Government will grant the desire of the Nova Scotia coal interests seems improbable. Those interests have the benefit of the consumption maintained by the iron and steel industries now supposed to be flourishing in Nova Scotia. The iron and steel works are assisted by bounties and high duties, and are thus enabled to maintain a large consumption of coal. On all Nova Scotia coal thus utilized half the Provincial royalty is waived. Were the Government to stiffen the duty on bituminous coal the manufacturing, railroad and other productive interests using coal would be exasperated. To these interests the soft coal duties even at present rates are barely tolerable. They are taxed solely for the benefit of mine owners in the extreme east and extreme west of the country, none of whose output is even distributed in the Province whose coal consumption on manufacturing account is greatest—namely, Ontario. When Ontario was in dire straits for coal, prepared to pay famine prices for it, because of the great strike at the hard coal mines of Pennsylvania, not a ton could be got of Nova Scotia's soft coal to lessen the hardships. Domestic consumers were offering the highest prices for soft coal. Municipalities and large dealers appealed to Nova Scotia mine owners, but the reply came back that all the output of the latter was disposed of. The exports of Nova Scotia coal continued to be heavy, and a great part of the Canadian population, who were submitting to taxation that had no other object than the prosperity of the Nova Scotia coal mining interests, had to make shift to keep warm on the small quantities United States exporters could dole out to them from time to time. It will rouse a strong feeling among coal consumers if the Government adds to the present coal duties.

C. A. C. J.

As the United States Senate has agreed with the House of Representatives on building two 26,000-ton battleship, it may safely be assumed that they will be authorized.

THE NEUTRAL LINE.*

A Plea for Scientific Regulation of the Tariff.

BY HENRY R. TOWNE, NEW YORK.

Taxes are either direct or indirect. A tariff is an indirect tax. Its primary purpose is revenue; it may include the secondary purpose of protection. A tariff rate intended to prevent importation ceases to be a tax and becomes a subsidy. In considering any proposed tax, these questions should be considered:

1. On whom will it fall?
2. What revenue will it yield?
3. Whom, if any, will it benefit?

If reliable data are available, and if the tax is for revenue only, these questions may perhaps be easily answered, but if it is wholly or partly for protection, to foster and benefit certain classes of citizens at the possible or intended expense of other classes, the problem becomes vastly complex, and its just solution requires information of many kinds, both industrial and commercial, concerning both domestic and foreign conditions, and a judicial atmosphere free from bias, selfish influence or corruption. In both cases the effort should be to find that "neutral line" between opposing considerations which will insure the maximum benefits and the minimum evils, the greatest justice and the least injustice, to all interests. The first endeavor should be to ascertain and consider the classes which must pay the tax; not those which it will benefit. Throughout should be kept in mind the fact that three great interests are involved—namely, the Government, which must have revenue; the people, for whom the Government exists and who must pay the taxes which support it, and the beneficiaries (if any) of the tax, whose interests are opposed to those of the other two, even though the public welfare may be promoted by encouraging the industry which they represent. The end to be sought is the "neutral line" which implies equal justice to each interest involved.

Present Evils.

The tariff affects, directly or indirectly, all interests and all classes; therefore all interests should be heard and considered in the adjustment of the tariff schedules. Does the present method accomplish this? Is not the contrary fact conceded? Under the present plan the work is done by the Committee on Ways and Means of the House of Representatives and by the Committee on Finance of the Senate, each sitting separately, each independently reaching tentative conclusions, and both reaching a final concurrence, which perforce implies mutual concessions and compromise. These committees have little or no disinterested expert assistance to guide them in their work. The evidence submitted to them is wholly *ex parte*. Practically only one side of the case is ever effectively presented, that of the parties interested in having a high rate of duty. Those who must pay the resulting tax—that is, the consumers—are rarely heard or represented. The present plan provides no means whereby the interests of the vast body of consumers are intelligently studied, or whereby they are enabled, still less encouraged, to make any collective effort for the protection of their interests.

The Remedy.

To correct these evils, to replace the present antiquated, inadequate and outgrown method by one better fitted to present day conditions, the remedy heretofore proposed, and which this argument is intended to advocate, is the creation of a permanent technical governmental agency, designed and equipped to collect, collate and study statistical facts of every pertinent nature, and to place the knowledge so acquired at the service of Congress, to aid and guide it in framing tariff legislation so that it shall best conform to that "neutral line" which implies the greatest regard for the interests and rights of all the people.

Two bills for the creation of a tariff commission are now pending in Congress. The Senate, or Beveridge, bill provides for a commission charged with the collecting of statistical data here and abroad, and with the furnishing of information based thereon for the use of Congress in framing tariff legislation. The House, or Fowler, bill covers similar provisions, but goes further by giving power to the commission to fix duties, either generally or for individual countries, between such maximum and minimum limits as Congress may authorize. In both cases the intent appears to be to create a commission which shall be an adjunct to Congress, designed, among other purposes, to do for that body collectively what is now done in other directions for Senators and Representatives individually by their respective clerks, stenographers and other assistants. It would seem expedient to give careful consideration to the alternate plan of vesting the functions proposed to be assigned to such commission in a permanent bureau of one of the administrative departments, presumably the Department of Commerce and Labor, where its work could readily be organized and effectively directed, reserving to Congress or its committees the power of indicating from time to time the work which it desires to have done. The latter plan would harmonize perfectly with the object set forth in the call for this convention, namely, "The creation of a permanent, non-partisan, semi-judicial tariff commission, which shall collect, collate and study industrial and commercial facts, in this and other countries, pertinent to the tariff question, for the information and use of Congress and the Executive." This is admirably paraphrased in the statement by President J. W. Van Cleave of the National Association of Manufacturers in these words: "We want a commission to ascertain facts, on which Congress can base rates."

Work of Commission.

The functions assigned to a commission or agency created for these purposes might properly include the following:

1. The collection and analysis of statistical facts, in this and foreign countries, relating to articles embraced in tariff schedules.
2. The collection of similar data concerning the tariffs of other countries, especially those with whom we have important commercial relations.
3. The collection of information concerning rates of wages, prices of materials, cost of living, &c., in this and foreign countries, especially as affecting the cost of articles covered by the tariff.
4. Estimates, based on the information thus obtained, of the probable revenue yield of any proposed new duty.
5. Such other work of similar kinds as may be called for by Congress through its committees.
6. The compiling and tabulating of all information so obtained, in the forms best adapted to serve the convenience of Congress and to assist it in framing tariff legislation.
7. The drafting of tentative tariff schedules, under the direction of Congress, to facilitate the work of the latter in framing tariff bills.
8. Furnishing to the State Department information useful to the latter in considering, negotiating or framing reciprocity and other commercial treaties.
9. Furnishing information to other executive departments of the Government which may be germane to their work or useful in connection therewith.

Continuous Revision.

Tariff revision should be continuous, not intermittent. The conditions which affect industry and commerce are ever in a state of flux; they are rarely fixed, and never for long periods. Among the many arguments against the intermittent system and in favor of the continuous system of revision are the following:

Under the intermittent system a general, and usually a serious, disturbance exists and continues for many months preceding each recurring revision of the tariff.

* From a paper read before the Tariff Commission Convention at Indianapolis, February 17, 1909.

To-day business halts, awaiting the outcome of the present discussion, in Congress and the country, concerning tariff revision. When revision is undertaken it involves the entire tariff structure, and opens the flood gates to opposing theories, clashing interests and the pursuit of selfish ends by every one concerned. The manner in which the work is done under such conditions has been alluded to above, and is antagonistic to the best results. The struggle endures for several months, when the curtain is rung down, the lists are closed and the new tariff is put into effect, to endure for weal or woe for many years. During the past 19 years we have had three such upheavals, as follows:

1890. McKinley tariff. In effect about four years.
1894. Wilson tariff. In effect about three years.
1897. Dingley tariff. In effect 12 years.

When the end of the period arrives, and often for many months preceding it, business is again disturbed by doubt and fear of impending changes, and great injury thus done to commerce and industry. Industry halts when revision impends.

Under the continuous system most of these adverse conditions would disappear or be reversed. In one sense the tariff would never be revised, in another it would be revised daily. Changes would be studied and suggested by the commission, but could be made only by Congress. These might be massed in a single bill at each session, covering the changes which had developed as expedient during the preceding year, or, more probably, would be distributed throughout each session of Congress among numerous minor bills, each relating to one or a few such changes. The facts underlying and necessitating or justifying such changes would be ascertained, studied and reported to Congress by the proposed permanent commission or bureau.

Tariff Framing.

The tariff, being primarily a revenue measure, presumably consideration should first be given to determining the amount of revenue which it will produce. In some cases this question may admit of easy solution, but in many others the problem is complex and its solution difficult. A duty may be so high as to curtail or even prohibit imports. In the latter case it ceases to be a source of revenue and becomes a subsidy to the protected interest. Before a subsidy is enacted into law, a clear understanding should be had as to its nature, as to the interests which would be benefited and as to the interests which would suffer. The effort should be to find the "neutral line," and for this a complete and impartial knowledge of the technical facts involved is essential.

In framing a protective tariff which includes both taxes and subsidies, the effort should be to find, as to each item, the "neutral line" intermediate between conflicting and opposing interests—

Between the interests of the producer and those of the consumer,

Between the one who pays the tax and the one who benefits by it.

Between the weight and importance of admitted benefit and profit, on the one hand, and of unavoidable injury and cost on the other.

For all of the purposes thus implied the proposed permanent commission or bureau would become a most helpful instrumentality and adjunct to Congress.

The Interest of Labor.

In all discussions of the tariff the plea is made that a chief purpose in view is protection to American labor. Are we not liable to be misled by this plea? Does labor actually share, and, if so, to what extent, in the proceeds of the tax resulting from a protective duty? Is it not a fact, known to all employers of labor, that, in fixing any individual rate of wages, no thought whatever is given to the tariff; that in every case the employer takes account solely of the value or efficiency of the workman, and of the current rate of wages in the trade to which he belongs; that the workman is guided solely by his knowledge as to the current rate, and by his needs; and that each makes the best bargain he can? Is it not true, further, that the rate of wages, in every trade, depends in large part upon the cost of living, and that a high tariff, by enhancing the prices of the products which it affects, tends to increase this cost? Finally, is it not true that the real measure of a wage rate is its purchasing power, and that needlessly high tariff rates tend to diminish the purchasing power of wages?

Granting the arguments thus implied, it follows that in fixing rates of duty at least equal effort and care should be devoted to investigating the incidence of the tax, and the burden it will impose on those on whom it will fall, as is devoted to considering the benefits which it may yield to those whom it is intended to protect. Here, again, we should seek to find the "neutral line." Has not the present system failed to do this, and would not the proposed commission or bureau of tariff research afford a partial, if not a complete, remedy by tracing and forecasting the effect of proposed duties on American labor?

Our Export Trade.

The United States is the great exemplar of free trade. Nowhere else, at any time in the world's history, have trade and commerce been so absolutely free and untrammeled as they are to-day in this great country, and among its 80,000,000 people. But students of economics predict that before long we will need, if we do not to-day, a larger market in which to dispose of the rapidly increasing output of our soil, mines, farms and factories; that, great as is the consuming power of our own people, it will soon be exceeded by the producing capacity of our manifold industries; and that, unless we soon take adequate measures to provide for the broadening of our foreign markets, there will develop an increasing pressure to sell in the home market, which, if not relieved, will tend to glut the latter, and which, by the increasing intensity of domestic competition, will operate inevitably to depress all prices in the domestic market. If this forecast of coming industrial and commercial events is sound, should we not promptly, in the adjustment of our tariff, seek to find that "neutral line" which, without serious or lasting injury to our domestic trade, will serve most effectively to open new and larger outlets for the export of our surplus products?

We are still chiefly producers of raw materials, and the greater part of our exports still consists of simple products which other industrial nations buy from us to convert into more highly finished goods, a large part of which latter they resell to us. For example, about 74 per cent. of all cotton is grown in the United States, but of this only one-third is converted here into finished goods, the other two-thirds being sold abroad as raw cotton, there to be converted into the finished product and sold in the markets of the world, which we are seeking to enter, and much of it resold to us. Of the cotton textiles sold in 1907 in South America, $47,000,000 were bought in England and only $3,700,000 in the United States. Should not our tariff policy aim to promote the larger conversion of our raw materials into finished products at home, thereby giving increased employment to American labor? To accomplish this we need to find the "neutral line," which, while promoting the growth of our manufactures, will yet safeguard the interests of our producers of raw materials. For the study of the new and complex questions involved in this problem would not the proposed commission or bureau be invaluable to the nation and to its representatives in Congress?

Conclusion.

The essential features in the foregoing argument may be summarized as follows:

1. The tariff embodies the heaviest tax which the people of the United States impose on themselves; it yields one-half of the national revenue.

2. The present method of fixing tariff rates is through Congressional committees, acting chiefly on *ex parte* evidence, unaided by neutral expert advice, and acting at long intervals.

3. This method produces inequalities which are unnecessary, unjust and either harmful or absurd; it is crude, unscientific and outgrown; it should be replaced by a better and more modern method.

4. The present method imposes an unnecessary and unreasonable hardship on Congress, by requiring its com-

mittees to do, under extreme pressure and a most unfavorable environment, preparatory work for which their members possess no previous training or experience, for which they have no adequate opportunity, which is highly technical and specialized, and which should be done for them by a properly constituted subordinate agency.

5. The remedy is a permanent technical bureau of tariff research, to collect, collate, analyze and report industrial and commercial data, domestic and foreign, for the use and guidance of Congress and the executive departments.

6. Tariff revision should be continuous, not intermittent, thereby steadily approximating the tariff more closely to the "neutral line" of the greatest good and the least injury to all interests; adjusting it promptly to current changes in industrial and commercial conditions at home and abroad; obviating the chronic upheavals of business which intermittent revisions involve; and giving to the people continuity and steadiness, combined with reasonable flexibility, in this vitally important factor in their national and private affairs.

7. The influence of the tariff on wages rates is indirect, not direct; it chiefly influences them by affecting the cost of commodities and living, which in turn chiefly determine the rate of wages; the true measure of a wage rate is its purchasing power; hence anything tending to enhance the general cost of living operates to depress the purchasing power of wages; therefore the tariff should be adjusted with regard for all its effects on all the people, not with regard for protected interests only.

8. Our domestic production is rapidly overtaking our domestic consumption; hence our tariff policy should aim to find that "neutral line" which, while conserving the home market, will also best promote our progress in ability to compete on equal terms with the other great industrial nations in the markets of the world.

8. We are now exporters chiefly of raw products which other nations, our competitors, convert into finished goods and resell in higher forms in the markets of the world, largely to us; our tariff policy should aim to encourage a larger conversion of our raw materials into finished goods at home and by American labor, to promote which end Congress should have the assistance of a permanent bureau of tariff research, or its equivalent.

10. Finally, Congress should now address itself to the creation of a permanent governmental office or bureau, organized and maintained for the continuous and scientific study of the problems thus indicated, which shall perform, as Congress may direct, all of the technical work involved, through a competent staff of experts, statisticians, translators, stenographers and clerks; which shall furnish to the committees of Congress such information and assistance as they may call for; and which shall thus effectively aid Congress in finding the best solution of our tariff problems, in maintaining the tariff at all times in close adjustment to current conditions, and in overcoming the evils of our present system of intermittent revision, with the recurring upheavals which it involves in the business affairs of the nation and the people.

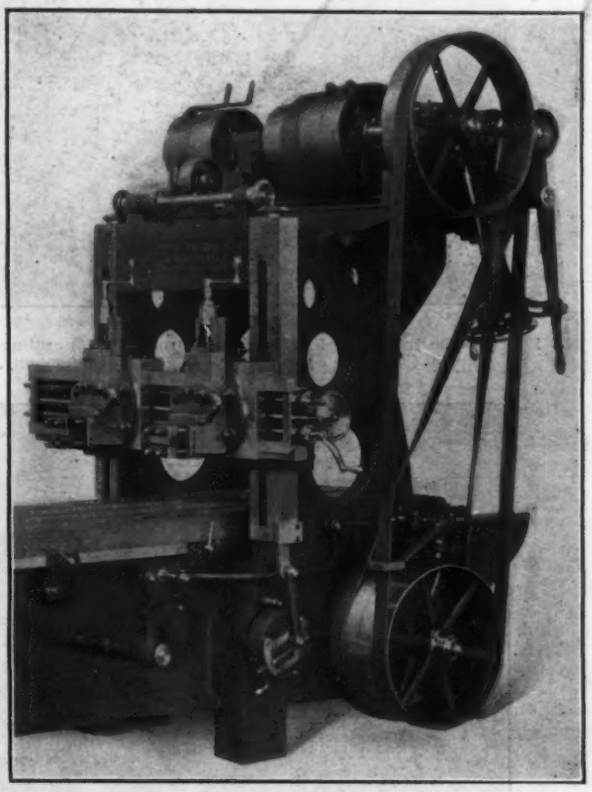
The Chicago Railway Appliances Exhibition.

An exhibition of all appliances used in the construction, maintenance and operation of railroads will be held at the Coliseum, Chicago, the week of March 15-20, inclusive. The appliances exhibited will be full size, and many of them will be in operation. For a number of years the Road and Track Supply Association had a small exhibit of models and drawings of these appliances in the parlors of the Auditorium during the annual meeting of the American Railway Engineering and Maintenance of Way Association. As railroad officials naturally would prefer to see the devices themselves, it was decided to give an exhibition that would comport in size and importance with the engineering and maintenance departments of American railroads.

The Coliseum was naturally chosen for this purpose. It will be the most complete exhibit of materials for the engineering department that has ever been held in this country. It is expected that the number of railroad officials in attendance will be very large, as it will be an opportunity of seeing the improvements in the different devices in which they are interested, and that they could use to advantage. That the manufacturers have shown great interest and taken advantage of this opportunity to show their product is evidenced by the large spaces that some of them have taken. Two firms have secured upward of 1500 sq. ft. each and several of 1000 sq. ft. each. The few spaces left can be secured by writing to John N. Reynolds, secretary-treasurer of the Road and Track Supply Association, 160 Harrison street, Chicago.

The Gray Planer Speed Variator.

In *The Iron Age* November 26, 1908, the speed variator made by the G. A. Gray Company, Cincinnati, Ohio, was illustrated as applied to a large planer and directly geared to an individual driving motor mounted on the top of the housing. When motor drive is not desired the speed variator can be arranged to be driven by belt from a line shaft using tight and loose pulleys mounted directly on the constant speed shaft, as shown in the illustration herewith, which represents a 30-in. variable speed planer. The tight and loose pulleys are of the



A 30-In. Belt Driven Variable Speed Planer Built by the G. A. Gray Company, Cincinnati, Ohio.

differential type, the loose pulley being smaller than the tight, so that the belt pull is relieved when not actually driving, and a beveled shoulder between the pulleys facilitates shifting the belt. The belt shifter for the tight and loose pulleys is entirely universal, and can be set to shift the belt whether the planer stands in front or behind, or even directly under the line shaft. The handle controlling this shifter is conveniently located at the working side of the machine.

This variable speed planer like the company's larger machines gives four cutting speeds with a constant return. Special attention is called to the fact that on all of these variable speed planers the speeds can be changed without shutting off the power or without even stopping the movement of the planer table, thus saving the time which would otherwise be lost waiting for a flywheel and other rapidly revolving parts to come to rest.

The post office appropriation for the coming fiscal year, as passed by the United States Senate, amounts to the huge sum of $224,483,370.

The Rockwell Internally Fired Helical Furnace.

BY C. M. RIPLEY, NEW YORK.

Uniform heating of material in manufacture is probably the most important operation to which it is subjected.

Fig. 1.—The Internally Fired Helical Furnace for Annealing and Hardening Small Products, Built by the W. S. Rockwell Company, New York.

Fig. 2.—View of the Opposite Side, Further Showing the Operating Mechanism.

Upon its success the success of most of the other operations largely depends. The good or ill effects of annealing or hardening extend to all future operations upon the metal, and to the very life of the material itself. If the pieces are brass, for instance, and must be punched, drawn or spun, the machine which handles them will run much easier, smoother and faster without risk, if they are clean and uniform in malleability. If they must be stamped or pressed, they will appear clear and distinct and few or none will be "scrapped." If they must be buffed or polished they will work easier and be of one color when finished. If the pieces are steel and must be hardened, they will be as hard as that particular steel will admit of, and will be free from scale, easy to temper or polish if necessary, and will be strong and durable.

Much annealing and hardening is still done in old style stationary furnaces, and owing to the size and shape of much of the material, it must continue in that way, whatever the inconvenience and expense. Where

size and shape have permitted some work has been done and is being done in rotating cylinders heated from the exterior. Such cylinders are generally made of cast iron, and it is obvious that the life of the iron is too short to be satisfactory for many purposes, especially for the heating of steel. It is also obvious that the cylinder cannot conduct the heat to the material as economically as a direct application. Tumbling barrel furnaces and bucket and chain conveyor furnaces have been used for certain low temperature work, each kind having its limits as to durability and efficiency, and each suggesting at once a protest against earlier and cruder methods, as well as a hope for better ones to follow.

The internally fired helical furnace, here described and illustrated, designed and built by the W. S. Rockwell Company, 50 Church street, New York, is intended for heating uniformly large quantities of small equal size bits of valuable material in brass, copper, steel, aluminum, gold, silver and other metals which must be annealed or hardened, such as cartridge shells, ferrules, eyelets, buttons, caps, cups, coin blanks, steel balls, saw teeth, tacks, screws, rivets, rings, springs, nuts, punchings, &c. Figs. 1 and 2 are general exterior views showing the operating mechanism and Fig. 3 an elevation, partly in section, from which it will be seen

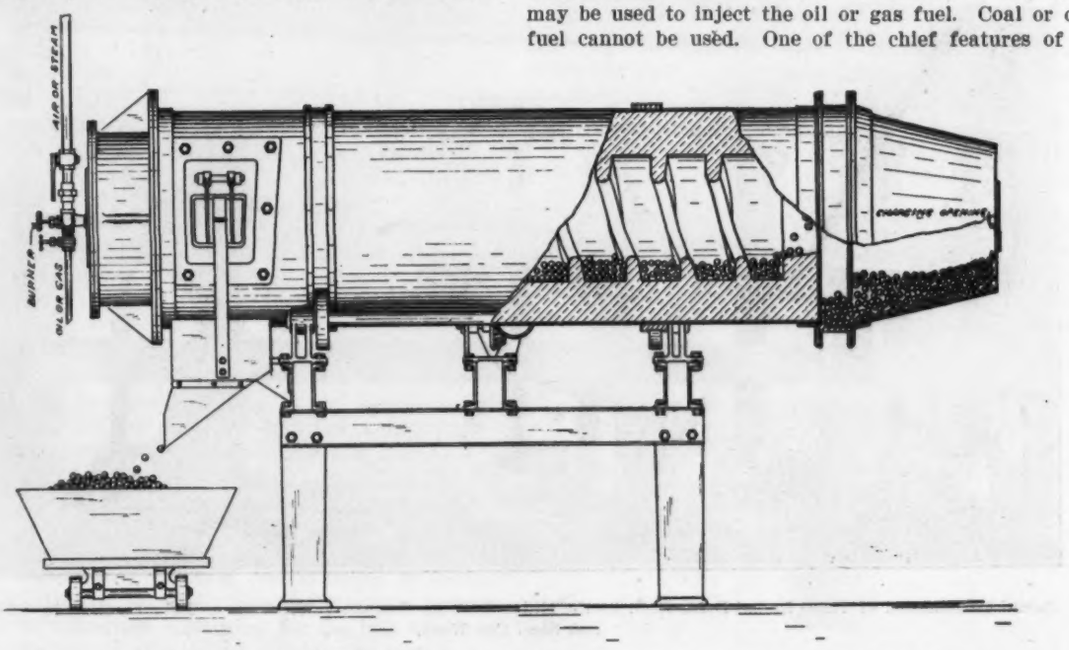


Fig. 3.—Elevation, Partly in Section, Showing the Helical Trough Through the Furnace.

that the furnace is formed of a steel cylinder, with a smooth fire tile lining of helical form, and is rotated upon rollers supported by a suitable iron frame. The power may be furnished from a line shaft or from a motor suitably controlled. Ordinarily the speed is from one to three revolutions per minute and the time of travel through the furnace from 3 to 10 min. Either oil or gas may be used as fuel, and it is injected directly into the chamber in the opposite direction to that of the travel of the material. Combustion is complete, and the spent gases find vent where the material enters, giving up their heat to the incoming material as they pass. Thus not only is the heat fully utilized, but the material is heated up in that gradual manner which is best for it. The material is charged into the feed drum in bulk and is then wormed through the furnace at a uniform and positive speed. The time and temperature for every piece is absolute. Starting cold, the material winds its way through the convolutions of the furnace for a distance of about 47 ft., constantly turning over, exposing its entire surface to the direct action of the heat, and reaching its highest temperature at the point of discharge, where a pyrometer is located to show that temperature. Such heating is ideal, especially for hardening steel which should enter the bath at its rising hardening temperature. This action is important also in preventing or reducing oxidation.

In a test of a lot of 15,732 pieces of steel run through one of these furnaces and hardened in oil only two pieces were found imperfect, and they from flaws in the steel itself, not from the heat. The manufacturer stated that such runs were the rule, not the exception. Material annealed in this type of furnace in 6½ min. was found to be cleaner and better in every way than the same material annealed for 45 min. in a tumbling barrel type of furnace. This would seem to prove that protection from oxidation and saving of time are both effected when the material is heated up gradually, never overheated, and discharged the moment it has reached its maximum temperature.

When the furnace is used for hardening, a quenching tank and conveyor is provided below the discharge spout, so that the material after immersion is automatically removed from the bath quite clean and delivered into a truck or wheelbarrow. Provision is made so that two kinds of material cannot become mixed, nor any lodge in any part of the furnace or bath. By simply removing two bolts the conveyor can be easily removed from the bath, giving free access to every part for cleaning or other purpose.

The furnace requires no chimney. A hood to carry off fumes from the oil bath or from machine oil on the material is sometimes desirable. Either air or dry steam may be used to inject the oil or gas fuel. Coal or coke fuel cannot be used. One of the chief features of the internally fired helical furnace is its durability. Practically all the ironwork is out of range of the fire, and all the parts are simple and strong.

French exporters are exercised over the threatened changes in our method of valuing imports. A delegation consisting of representatives of French chambers of commerce and manufacturers of gloves, lace, porcelain, perfumery, &c., called February 20 on Minister of Commerce Cruppi and pointed out the disastrous effects to them of the proposal to impose ad valorem duties in America based on prices there and not in the country of origin. Instead of an increase they insisted that the French general tariff must be reduced to a minimum rate in order to permit greater elasticity in the tariff revision there and in America. M. Cruppi promised to take these suggestions under consideration.

After a debate lasting two days the tariff reform amendment to the address in reply to the king's speech from the throne was defeated in the British House of Commons February 19 by 276 votes to 107. The amendment was proposed by J. Austen Chamberlain, and he had all the backing of the opposition benches. The debate followed the old lines, the Unionists advocating duties favorable to colonial produce as a means of securing the markets of the empire to British manufacturers

Multiple Variable Speed Electric Drive for Paper Machines.

The first Fourdrinier paper making machine to be driven by individual electric motors on the various parts has just been placed in operation by the Gould Paper Company, Lyons Falls, N. Y. This is the first time that electric motors have been used to overcome the difficulties caused by the exacting speed requirements of a paper machine, and the results indicate that they are superior to complicated belt, shafting and gear systems previously used to obtain similar results. Absolutely unvarying speed of the motors must be maintained in order not to break the pulpy web in its passage from section to section of the machine. There are numerous difficulties in maintaining a continuous sheet of paper on account of the inconsistency of the stock, the irregularities of the mechanism, the elongation of the web due to pressing and the shrinking in the drying process, and lastly, and very important, in regulating the driving mechanism so as to allow for the contraction and expansion of the sheet of paper in passing over the machine. A tedious adjustment is sometimes required to get the draw of paper between the several sections adjusted so that the web of paper will run the longest time without breaking; there is a considerable loss of time and material when a break occurs.

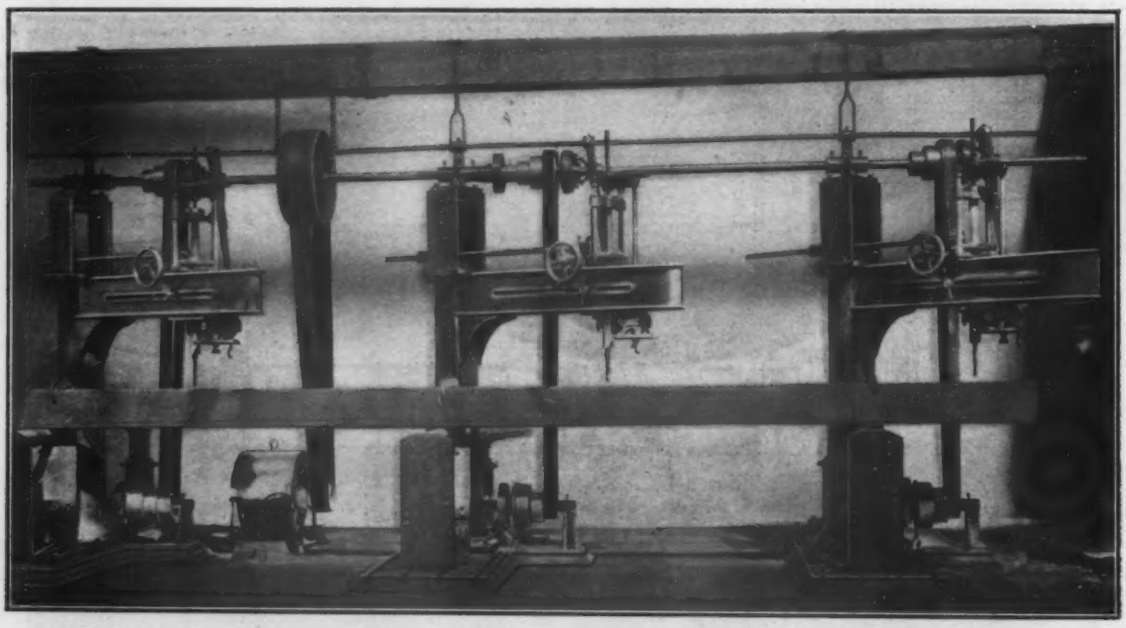
If constant speed were the only requirement, synchronous alternating current motors might have been adopted. There is the added complication, however, that all classes of paper are not made at the same speed. For instance, newspaper is made at a high speed and heavy bag paper requires a very low speed. Besides this the heavy starting torque required to start the couchers, presses, dryers and calenders makes the use of alternating current motors impossible.

The system installed for the Gould Paper Company was worked out by the Standard Engineering Corporation, Wilmington, Del., and Philadelphia, Pa., assisted by the engineers of the Crocker-Wheeler Company, Ampere, N. J., which company furnished the generating plant and all the motors for the drive. The system can be operated at any speed to accommodate any kind of paper. The motors, once adjusted to uniform speed, will remain in adjustment indefinitely.

In an elaborate paper before the Engineers' Society of Western Pennsylvania recently, on the "Corrosion of Iron and Steel," Alfred Sang, Pittsburgh, reviews the results of investigations into the causes and prevention of corrosion, making numerous citations to the literature of the subject. In the discussion of the paper the reliability of the acid test as an indication of relative rates of corrosion of steel was questioned. It was stated on behalf of the National Tube Company that complete service tests from 30 different railroads in the past two years on charcoal iron and modern lap weld steel pipe showed that the steel corrodes more uniformly and somewhat less than iron. As the result of its study of the question this company decided to abandon the manufacture of charcoal iron pipe.

A Hilles & Jones Three Drill Combination.

An interesting combination of three radial drills as used in a shipbuilding plant for drilling long channels and small sections used in the construction of steel underframes is shown in the illustration. By drilling the holes required instead of punching them the necessity of rehandling the channels on a straightening machine is avoided. All of the gears are of cast steel, and each drill is provided with a round table and screw. The driving is from a shaft carried in bearings secured to the top of each column, and with a cone pulley for belting directly to the driving pulley on the machine. Each machine has a friction clutch, so that the drills may be stopped independently as required. This special drilling combination is built by the Hillis & Jones Company, Wilmington, Del., and is now in successful use also on steel car work.



A Special Combination of Three Radial Drills Built by the Hilles & Jones Company, Wilmington, Del., for Use in Shipbuilding and Steel Car Work.

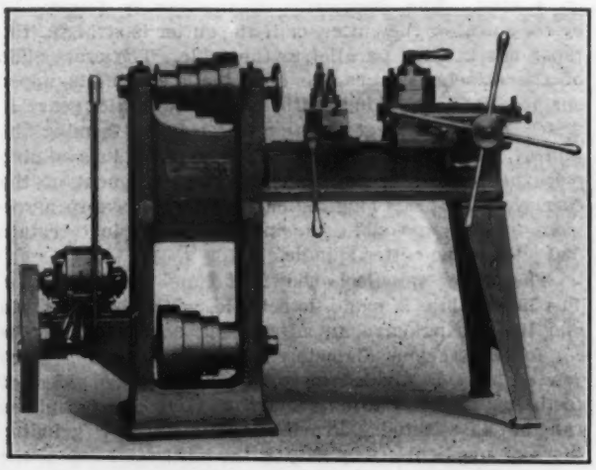
Consul Albert Halstead of Birmingham, England, writes that not many American manufacturers are locatin that district to manufacture patented articles, because of the enforcement last year of the British laws governing the working of foreign patents. However, there are a good many plants which British owners would like to sell to American manufacturers at a good price. A number of British firms are working American patents under royalties. In one case a special plant has been built to manufacture a galvanized article not previously made in England, but in general use in the United States. Birmingham manufacturers themselves, the report says, are not encouraging the establishment of new factories by Americans or other foreigners, because such factories would ultimately compete in other lines also, but are encouraging Americans to sell them their patent rights, or to authorize manufacture under royalties.

Purdy & Henderson, Inc., civil engineers, have removed from 78 Fifth avenue to the Everett Building, Union Square, north, New York.

A Dreses Motor Driven Turret Brass Lathe.

A unique application of motor drive to a 13-in. turret brass lathe has been made by the Dreses Machine Tool Company, Cincinnati, Ohio. On account of the high spindle speed of such a lathe geared speed changes are almost out of the question. There is also the objection to a variable speed motor that, mounted on the head and due to its large size, it is not only somewhat unsightly, but a source of vibration that affects the quality of the work. For these reasons it was decided to use a constant speed motor and to make the speed changes in the old fashioned way by cone pulleys.

The motor used is of 1½ hp. and of alternating current high speed type. A rawhide pinion on its armature



A 13-in. Turret Brass Lathe Built by the Dreses Machine Tool Company, Cincinnati, Ohio, Equipped with Constant Speed Motor Drive.

shaft meshes with a large gear on the cone pulley shaft journaled in the head pedestal. To avoid the comparatively slow starting and stopping of the machine that would result if affected alone through the motor, a friction clutch is provided, operated by the long lever shown at the head end of the lathe, which connects and disconnects the lower cone pulley from its driving gear. With the motor running constantly while the tool is in use temporary stops and starts can be made very quickly. It will be noticed that the lower cone is placed as low as possible to allow a long belt between the cone pulleys and to avoid vibration. Clearance for the belt where it straddles the bed is afforded by making the section between the bearing blocks of the spindle thin, and to preserve the requisite strength and stiffness this section is correspondingly deeper, as is clearly shown in the illustration.

The American Electrochemical Society.

The annual meeting of the American Electrochemical Society, which is to be held at Niagara Falls May 6, 7 and 8, promises to be one of the most important gatherings in its history. During the year E. G. Acheson has been president of the society unusual efforts have been made to secure new members and the growth has been most satisfying. Special efforts are being made to interest electrometallurgists, for it is realized that this society has more in it for workers in the electrometallurgical field than any other organization. It is particularly true at this time when the electric furnace is being adapted for steel making. It is generally realized that we are on the eve of great advances along these lines, and it is worthy of note that the first day of the convention is to be devoted to papers on metallurgy of iron and steel.

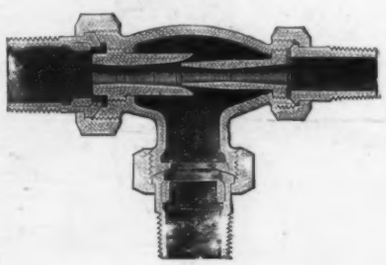
A letter has been received from Gustave Gin of Paris in which he promises to send in an important paper. He has worked on several types of electric furnaces in the manufacture of calcium carbide, ferroalloys and steel. His principal steel furnace is installed at the Krupp Works. John Hay, manager of the Gröndal Kjellin Company, Ltd., has promised that a paper will be sent by Dr. Kjellin which will include much interesting data on the new eight-ton Röehling-Rodenhauser steel furnace which has been working at Volklingen, Germany, for some time and has been giving unexpectedly good results. In reply to a request addressed to Mr. Girod, he has cabled that he will send a paper. The Girod steel furnace is a type of which little is known in this country, although it is being extensively exploited in Europe. A paper on the Heroult steel furnace is expected from Robert Turnbull, who for several years has acted as Dr. Heroult's chief engineer. The paper is likely to be of unusual interest because two of this type of furnaces are being installed by the United States Steel Corporation.

In addition to these papers others are expected from the principal workers in the electrometallurgy of iron and steel, such as Keller, Stassano, &c. Dr. Haanel of Canada, who has recently returned from Sweden, has also been invited to present a paper.

The Lunkenheimer Improved Ejector.

The Lunkenheimer Company, Cincinnati, Ohio, manufactures the ejector shown herewith for raising water from deep wells, mines or pits, filling or emptying tanks, raising and transferring liquids, either hot or cold. The claim for superiority lies in the construction of the tubes, which are made of a very hard bronze especially adapted for the severe service to which ejectors are generally subjected. These tubes are screwed in the body and are not loosely placed therein and held by the unions only, consequently there is no possibility of losing the tubes when the unions are removed.

This ejector is claimed to be more ecomonical than any heretofore produced, due to the improved shape of the tapers inside the tubes; less steam is required for a given quantity of water delivered than formerly. It is claimed also that the ejector will lift water a greater



Section of the Improved Ejector Made by the Lunkenheimer Company, Cincinnati, Ohio.

hight and will force it higher than other makes, and will take water at a higher temperature. Those parts subject to wear consist of the tubes only, and these can readily be renewed at small cost. It is only necessary to turn the steam on full to operate the ejector, and after getting the flow of water established the steam can be throttled to a very small flow.

The following tables give the amount of lift, together with the hight that the ejector will force water when placed about 5 ft. above the water level:

Lift of Ejector (in Feet).—Feed Water, 75 Degrees F.

Pressure, lb.	5	10	15	20	25	30	40	50	60	70	80	90	100
Lift, feet	3	7	11	15½	21	21	20	19	18	17½	16½	15½	14½

Hight (in Feet) Ejector Will Force When Placed 5 Ft. Above Water Level.—Feed Water, 75 Degrees F.

Pressure, lb.	20	30	40	50	60	70	80	90	100
Hight, feet	18	28	36	46	57	66	74	84	92

Table of Capacities.

Size letter.	Steam.	Pipe connections. Suction and delivery.	Capacity, gallons per hour; feed water, 75 deg. F.; lift, 20 ft. Steam pressure, 50 lb.
A—Brass	⅜	½	250
B—Brass	½	¾	500
C—Brass	¾	1	960
D—Brass	1	1¼	1,300
E—Brass	1¼	1½	2,000
F—Iron	1¼	2	4,000
G—Iron	1½	2½	8,000
H—Iron	2	3	11,000

The Walker Formed Cutter Grinding Attachment.

A new principle in the sharpening of formed cutters, including gear cutter hobs, is embodied in a grinder attachment made by the Walker Grinder Company, Worcester, Mass. Instead of grinding the radial faces of the cutter teeth with the side of the wheel while they are held vertically, they are ground with the beveled edge of a wheel held on a spindle set at a vertical angle of 45 degrees or more, and the faces themselves are in a horizontal plane. As in surface grinding, the periphery of the wheel is used instead of the side. The attachment is intended for the new Walker No. 2-K grinder, described in detail in *The Iron Age*, January 21, 1909.

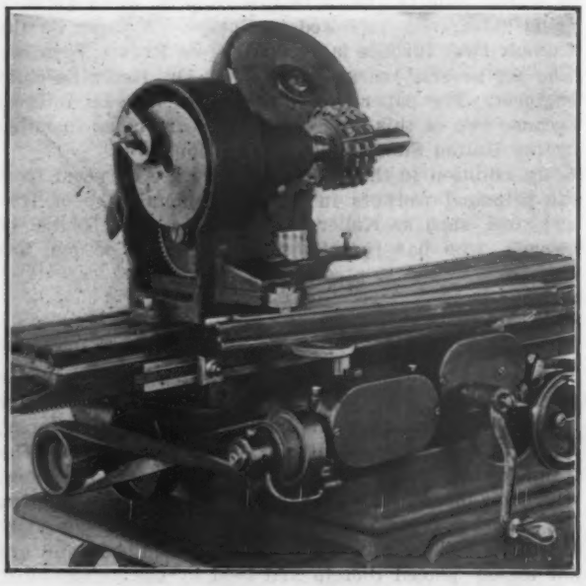


Fig. 1.—A Formed Cutter Grinding Attachment for the No. 2-K Grinder Built by the Walker Grinder Company, Worcester, Mass.

Fig. 1 is a photograph of the attachment; Fig. 2 a plan view, partly in section, illustrating chiefly the arrangement of the taper bar, hollow spindle and cutter arbor; Fig. 3, a left end elevation, showing the indexing mechanism, and Figs. 4 and 5 are right end elevations, demonstrating grinding gear cutter hobs of right and left handed pattern solid with their shanks. Figs. 6, 7 and 8 afford a comparison of the new method with those most commonly in use.

The attachment consists of a stand which is fastened to the top of the grinder platen and in which is journaled an indexed hollow spindle with internally tapered end to receive the cutter arbors. The spindle is partially rotated for grinding spirals by gearing meshing with teeth formed in a cross slide, which is attached to an ordinary lathe taper bar; with it any desired spiral may be obtained. The base piece of the taper bar rests at one end on the feed gear box of the machine and at the other on a stud. The angularity of the bar is determined by the spiral of the cutter, or if the cutter is straight, the taper bar is fixed parallel to the table. The cross slide of the attachment has the rack teeth cut in its upper surface at *a*, meshing with an intermediate gear, *b*, which in turn engages a segment gear, *c*, forming the hub of the arm *d*, bearing the index pin *e* in a sliding piece having radial adjustment. The movement of the carriage as it feeds longitudinally gives transverse movement to the cross slide, causing the index pin to rotate and with it the cutter spindle.

The hollow spindle is shown at *f* and the arbor at *g*. The index plate is made detachable, while the index pin and its bearing have an adjustment, so that it can be set for the various diameters of the hole circles. Each row of holes is divided to correspond to the number of teeth in the cutter to be ground, and other index plates can be substituted. Provision is made for grinding taper grooved cutters by setting the adjustable top of the platen at an angle, and on spirally grooved cutters the grinder head can be set at a horizontal angle by swiveling the housing *h*, Fig. 4, which supports the grinder head.

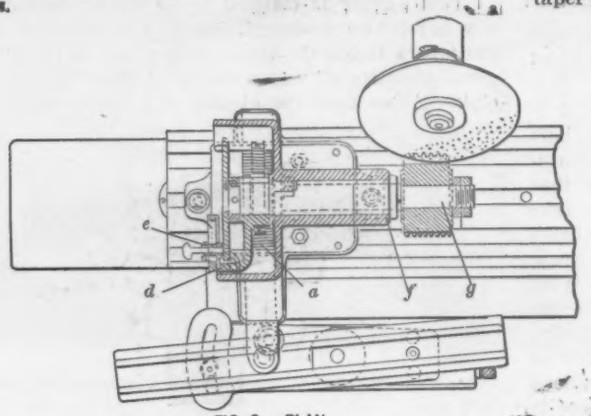


FIG. 2 PLAN

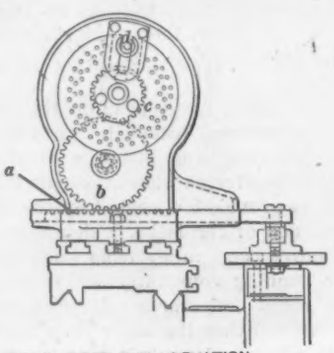


FIG. 3 LEFT END ELEVATION

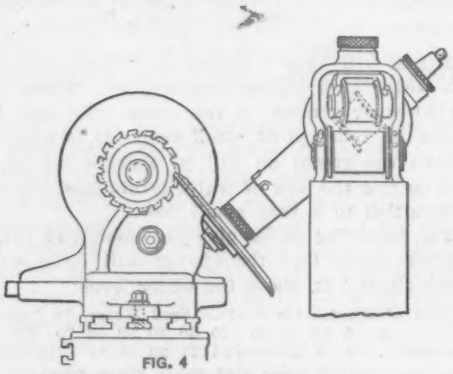


FIG. 4
GRINDING LEFT HAND CUTTER

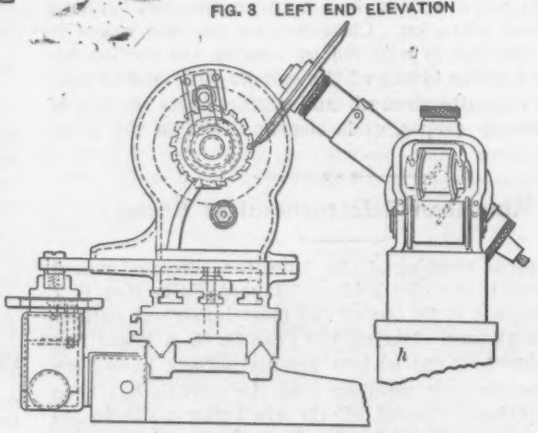


FIG. 5 GRINDING RIGHT HAND CUTTER

Details of the Walker Formed Cutter Grinding Attachment.

The comparison of the methods of grinding cutters is shown in Figs. 6, 7 and 8. Fig. 6 is the common practice in which a dished abrasive wheel is used, grinding the whole surface of the tooth at once, with an action similar to that of milling. In Fig. 7 is illustrated the method of grinding by means of a tilted grinding spindle, the in-

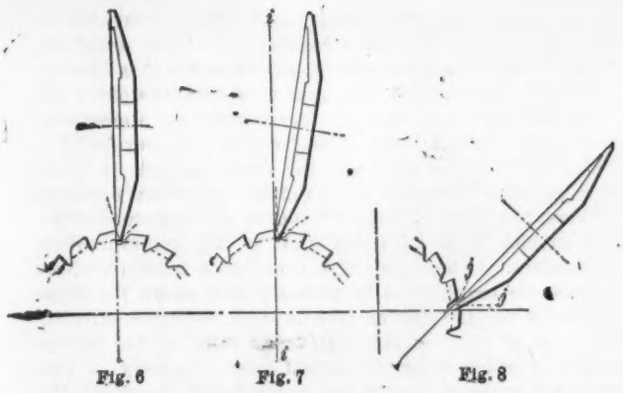


Fig. 6 Fig. 7 Fig. 8

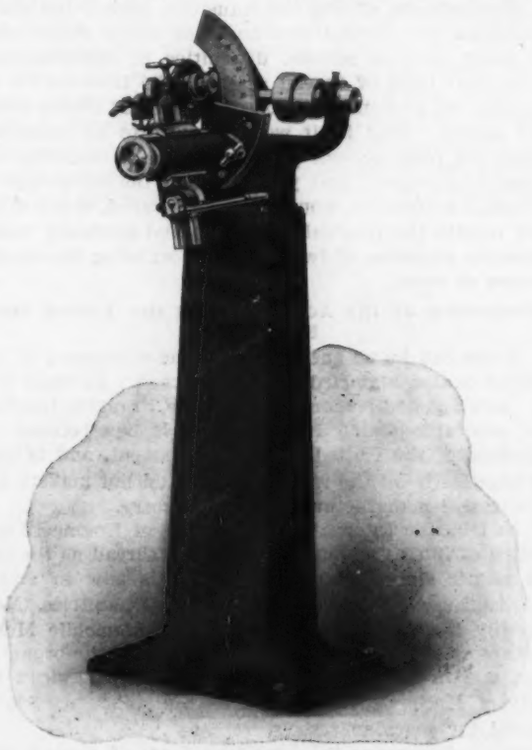
Comparison of Old and New Ways of Grinding Cutters.

tention being to use a vertical feed on the line *i i*. In Fig. 8 the method employed in the new attachment is shown, wherein the face of the tooth to be ground is placed in a horizontal plane and the grinding spindle is inclined to the proper angle to suit the cutter groove. The grinding is done by the beveled periphery of the wheel, the same wheel as employed in the other methods.

By the new way the wear of the wheel simply reduces its diameter and the outer corner will wear but slightly rounded, as will be noted in the line *j j*, Fig. 8. Other advantages claimed for this method are a reduction of heat, the ability to grind into a sharp corner, and the important improvement of being able to grind a spirally grooved cutter. The belt arrangement which makes possible this system was described in detail in the article on the machine itself.

The National Die Sharpener.

To secure satisfactory results from threading dies they must be sharp, with the cutting clearances correct;



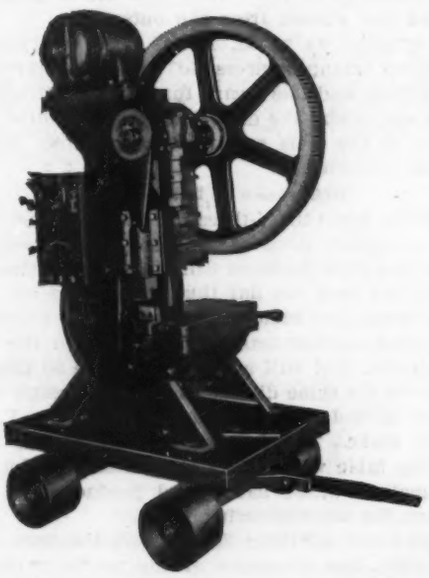
A Machine for Sharpening Threading Dies, Built by the National Machinery Company, Tiffin, Ohio.

and to secure a maximum life they must cut equally. A new die sharpening machine, recently brought out by the National Machinery Company, Tiffin, Ohio, is intended for accurately sharpening bolt cutter dies, giving them the proper entrance and correct clearance. Such grinding insures that each die in a set will do the same amount of work, resulting in better threads, and in greatly increasing the life of the dies. The machine will sharpen any size or type of threading die on the market.

The machine is simple in design, and can be handled by an inexperienced operator. A 6-in. wheel is used, which can be redressed until it is worn down to 3½ in. in diameter without affecting the machine's operation. A suitable chart is furnished for making the necessary change from one size to another.

A Bliss Portable Motor-Driven Trimming Press.

A portable trimming press is convenient in drop forge shops as a means of doing otherwise expensive and troublesome work. In many shops equipped only for large work it is sometimes desirable to make small forgings, though not frequently enough to warrant installing special trimming machinery, even though the trimming cannot be satisfactorily done by the larger machines. In the latter case it would be necessary either to put small trimming dies in a large trimming press or to set up a small trimming press beside the drop hammer. Neither is very economical or satisfactory. The portable tool shown is made for just such contingencies by the E. W. Bliss Company, Brooklyn, N. Y., and has a driving motor made by the General Electric Company, Schenectady, N. Y. Being self-contained and mounted on a truck, it may be readily transported as required.



A Portable Bliss Trimming Press with General Electric Motor.

The truck is extended sufficiently to protect the machine from injury by accidental collisions in moving it about. Absence of overhanging parts gives the press the added advantage of being less in the way, as it must necessarily be operated in aisles and between other machines. Connecting the flexible motor extension leads to a current socket prepares the machine for use after it has been located. The 2-hp. motor drives the press through gears, so that there are no belts to be found or adjusted when the truck is moved to a new place. The starting switch and control apparatus are mounted on the frame of the machine in an accessible position.

The Phenix Tube Company, manufacturer of steel butted, brazed and twisted tubes, Driggs avenue and North Tenth street, Brooklyn, N. Y., with offices in Chicago and San Francisco, is placing on the market square steel tubes, for which it claims great strength and rigidity. The tube is brazed by the company's special process, and is made in sizes from ½ to 2 in. outside measure. The company especially states that, owing to improved methods of manufacture, it is enabled to market the tube at a price which will permit of its use in many ways formerly impossible owing to high cost.

The Elimination of the V-Thread.

Tap and Die Makers Adopt the United States Standard.

For a number of years the tap and die makers of this country have had under consideration the advisability of discontinuing the regular manufacture for stock of V-threaded taps and dies, and the general adoption of the United States standard or Sellers form for all 60-degree screw threads. There can be no question but that such action, as now definitely decided upon, will be of wide importance to tap and die manufacturers, users and dealers.

The V-Standard No Standard.

The V-standard, so-called, is a standard existing only in theory; in practice the V-thread, nominally an equilateral triangle in section, is flatted at the top an amount varying with the practice of the different manufacturers. It is, of course, recognized that the slightly flatted top is an essential feature of this thread, as it is a mechanical impossibility to maintain the size of a tap with perfectly sharp threads while a single hole is being tapped; the removal of the metal during the operation causing the sharp tops to be worn away and the original diameter to be lost almost from the outset.

Consequently, as noted, it has been customary for the different manufacturers to leave the thread top slightly flatted, and this means that if the external diameter is made to size the diameter when measured at the pitch line in the V is somewhat larger than the true, theoretical diameter.

Difference in Diameter.

In cutting down the V-thread in the tap, some makers stop at one point, some at another. One concern may cut down to a pitch diameter 0.010 in. over the theoretical size, believing that the flat thus left at the top of the thread presents just sufficient surface to give satisfactory results, while another manufacturer may cut the thread a little deeper, and still another not quite so deep. No two work to the same dimensions and the result is that the actual thread diameters, measured in the V, differ with every make. This fact is well illustrated by the accompanying table which gives the diameters adopted by various makers whose names and products are known throughout the manufacturing world.

A comparison of these figures with the true or theoretical pitch line diameters of the perfectly sharp V, as given in the fourth column from the right of the table, will reveal some interesting irregularities. The values in this column are equivalent to the outside diameter of the threaded piece less the depth of a single thread, as computed by the formula

$$\text{Pitch diameter} = D - \frac{0.866}{P},$$

where P equals the number of threads per inch and D the outside diameter. The columns headed A, B, C, &c., represent the actual sizes worked to by the different tap manufacturers. Thus in column A will be found the diameters adopted by one concern, while column B shows the practice of another maker; and so on across the table.

Considering, for example, the ¼-in. 20-thread size, the tabulated data show that this is made all the way from 0.0023 to 0.0103 in. larger than the standard pitch line diameter; and, in the case of the ½-in. 12-thread, the range throughout the different lines is from 0.0062 to 0.0142 in. oversize in the thread angle. The ¾-in. 10-thread dimensions show an increase over the theoretical diameter ranging with different makers from 0.0068 to 0.0136 in. and in the case of the 1-in. 8-thread size the oversize allowance is from 0.008 to 0.0182 in. The variation for other sizes may be readily found by merely subtracting the values under the alphabetically headed columns from the corresponding sizes given in the column at the right of the table.

Impracticability of the V-Standard.

It is obvious upon inspection of the figures presented in this table that the term V-standard is a misnomer; and that an anomalous condition of affairs is created by the perpetuation of this irregular or alleged standard. Here, in short, is a so-called standard which it is impracticable to follow faithfully and to which, therefore, all V-thread taps and dies are necessarily an approximation only. Hence, each manufacturer has developed a "standard" of his own and the resulting lack of interchangeability between the products of these different makers has been a constant source of expense and inconvenience both to users and to the manufacturers themselves. It has made it impracticable in shops where screws are required to fit properly and where for illustration a certain line of taps is used, to make satisfactory use of another manufacturer's taps, as the screws will then either enter the tapped holes too freely, or possibly not enter at all. It has necessitated, therefore, the carrying of large stocks of taps and dies by all concerned and to a considerable extent has restricted the market in which purchasers of these tools can secure their supplies.

Two Possible Courses.

In considering the possibility of eliminating this undesirable state of affairs, two courses have been fully weighed and discussed by the tap and die manufacturers: one, the actual standardization of the V-thread; the other the adoption of the United States standard form of thread for all regular tools and the cessation of the manufacture of V-thread taps and dies except for special work. The pursuit of the former course would mean the establishment of a uniform pitch line diameter for all V-thread taps and dies of given size, and this would necessarily involve a change in the present practice of each manufacturer concerned, some having to cut their V-threads smaller and some larger than heretofore in order to conform to the dimensions decided upon. At the best the result could be nothing better than a compromise measure serving to perpetuate a form of thread having at the present time little excuse for existence in connection with regular lines of work.

Furthermore, during the transition period, the standardization of V-thread taps and dies would create quite as many, and as serious, difficulties in establishments using that form of thread as would be involved in the straight out and out adoption of the United States standard thread. That is, it would constitute an important departure from present practice so far as concerns the shops in question; and yet, although the advantage of V-thread uniformity would thus be secured, there would still remain the illogical, expensive and generally unsatisfactory situation of two standards existing for similar classes of work.

Recognition of the Advantages of the United States Standard.

There can be no question as to the supremacy of the United States standard form of thread. Devised over 40 years ago and recommended by the Franklin Institute for general adoption by engineers, it has become the standard of the United States Government, and is used by practically all the railroads, bolt and nut makers and progressive manufacturers of the country.

In 1898 the International Congress of Engineers convening at Zurich adopted this form of thread as the best for metric sizes and pitches, and it is now in almost universal use throughout the continental countries. More recently the Association of Licensed Automobile Manufacturers has adopted it as the standard of the organization, and in 1907 it was accepted by the American Society of Mechanical Engineers as the standard form of thread for machine screws.

For many years this standard form of thread with depth equal to pitch × 0.6495, has been supplied by tap and die manufacturers, with practical interchangeability. The outline of the thread is such that it may be cut to the correct theoretical depth and to the true pitch line diameter without the allowances found necessary when cutting the so-called sharp V-thread. It will be seen by comparing the pitch diameters of the United States standard with even the largest of the V-thread diameters that the United States standard is a little larger in every case. This allows the retapping of any V-thread hole

Angle Size V Thread.—Comparative Angle Sizes of V Threads as Made by Different Manufacturers of Taps.

Size threads.	A.	B.	C.	D.	E.	F.	G.	H.	I.	J.	Theoretical diameter of sharp V thread measured in the angle.	Pitch diameter U. S. S.	Actual pitch diameter of one maker's V thread.	Difference left to tap out.
¼—20..	0.2107	0.217	0.214	0.2147	0.212	0.209	0.2147	0.214	0.217	0.217	0.2067	0.2175	0.2107	0.0068
9/128—18..	0.2683	0.275	0.275	0.2724	0.270	0.267	0.2724	0.2755	0.2755	0.2745	0.2644	0.2764	0.2683	0.0081
5/16—16..	0.3264	0.331	0.332	0.3290	0.327	0.325	0.3289	0.333	0.331	0.3315	0.3209	0.3344	0.3264	0.0080
7/16—14..	0.3822	0.386	0.386	0.3836	0.382	0.380	0.3836	0.3875	0.386	0.386	0.3756	0.3911	0.3822	0.0089
1/2—12..	0.4351	0.438	0.441	0.4378	0.4355	0.434	0.4358	0.442	0.439	0.441	0.4278	0.4459	0.4351	0.0108
9/16.....	0.4963	0.500	0.501	0.5003	0.4978	....	0.4983	0.50125	0.502	0.500	0.4903	0.5084	0.4963	0.0121
5/8—11..	0.5525	0.556	0.559	0.5563	0.554	0.554	0.5543	0.55925	0.559	0.558	0.5463	0.5659	0.5525	0.0134
11/16.....	0.6153	0.619	0.625	0.6188	0.6168	....	0.6168	0.6217	0.622	0.6245	....	0.6285	0.6153	0.0132
¾—10..	0.6702	0.673	0.671	0.6734	0.6715	0.671	0.6714	0.6715	0.677	0.671	0.6634	0.6850	0.6702	0.0148
13/16.....	0.7321	0.736	0.732	0.7359	0.734	....	0.7339	0.734	0.7395	0.7315	....	....	....	....
7/8— 9..	0.7875	0.789	0.795	0.7888	0.788	0.788	0.7868	0.796	0.796	0.795	0.7788	0.8028	0.7875	0.0153
15/16.....	0.8495	0.851	0.854	0.8513	0.8508	....	0.8493	0.858	0.858	0.8535	....	....	....	....
1— 8....	0.9017	0.902	0.900	0.9018	0.902	0.901	0.8998	0.901	0.910	0.900	0.8918	0.9188	0.9017	0.0171
1 1/16.....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
1⅛— 7..	1.0103	1.011	1.024	1.0113	....	....	1.0021	1.0135	1.022	1.022	1.001	1.0322	1.0103	0.0219
1 3/16.....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
1¼.....	1.1347	1.136	1.146	1.1363	....	1.137	1.1271	1.1385	1.147	1.145	1.126	1.1572	1.1347	0.0225
1 5/16.....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
1⅜— 6..	1.2422	1.241	1.251	1.2407	....	....	1.2387	1.243	1.249	1.249	1.230	1.2667	1.2422	0.0245
1 7/16.....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
1½.....	1.3678	1.366	1.378	1.3675	....	1.368	1.3637	1.368	1.376	1.377	1.355	1.3917	1.3678	0.0239
1⅝— 5..	1.4646	1.462	1.473	1.4618	....	....	1.4598	1.464	1.472	1.4715	1.467	1.4951	1.4646	0.0305
1⅝.....	1.5878	1.587	1.581	1.5868	....	....	1.5848	1.589	1.597	1.5795	1.576	1.6201	1.5878	0.0323
1⅞— 4½	1.6904	1.693	1.692	1.6926	....	....	1.6928	1.6947	1.702	1.690	1.682	1.7306	1.6904	0.0402
2.....	1.8219	1.818	1.833	1.8176	....	....	1.8187	1.8197	1.828	1.831	1.807	1.8557	1.8219	0.0338

to bring it up to standard size, and avoids the necessity of discarding any machine parts but the screws or bolts. The United States standard form of thread has been and is adhered to as a standard, and as such should render entirely feasible the elimination altogether of the V-form of thread for regular bolts, nuts and screws.

The Paxson Deemer Side Blow Converter.

A small side blow Bessemer converter of the construction shown in Figs. 1 and 2 has been designed for the use of steel foundries, the aim being to shorten as much as possible the time required for burning out the carbon in the molten metal and obviate the loss of metal resulting from prolonging the conversion process. As indicated in Fig. 1, the blast is directed against the metal partly from points above and partly from points below the surface, blowing it to the opposite side of the converter. This agitation of the steel and its rapid circulation, with speedy oxidation of the silicon, results in a high temperature and the removal of the impurities in a short time.

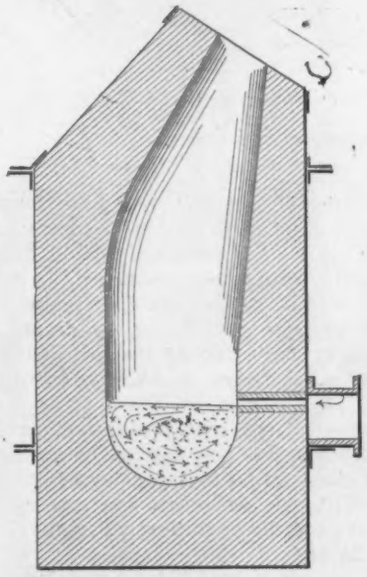


Fig. 1.—Section of the Paxson-Deemer Side Blow Converter.

A plan view of the converter, showing the wind box and tuyeres, is given in Fig. 2. The shell of the converter is of heavy steel plates and the wind box, trunnions, housings and other parts are of steel castings.

The converter is made in but one size and it is so constructed that by changing the lining and tuyeres it is adapted to a charge as low as 1000 lb. or as high as 8000 lb. of steel per blow and 12 to 15 heats per day of 10 hr. It is not advisable to make charges as low as 1000 lb., the manufacturers of this converter say, as the running expense is held to be too great in proportion. A cupola of the ordinary type, it is stated, will answer all the requirements for melting the charge, when the melter is familiar with the mixtures. The J. W. Paxson

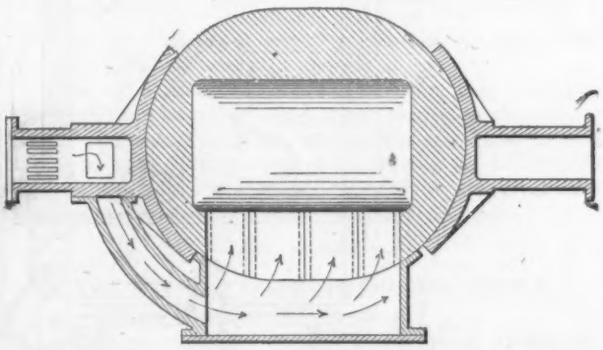


Fig. 2.—Horizontal Section Through Wind Box and Tuyeres.

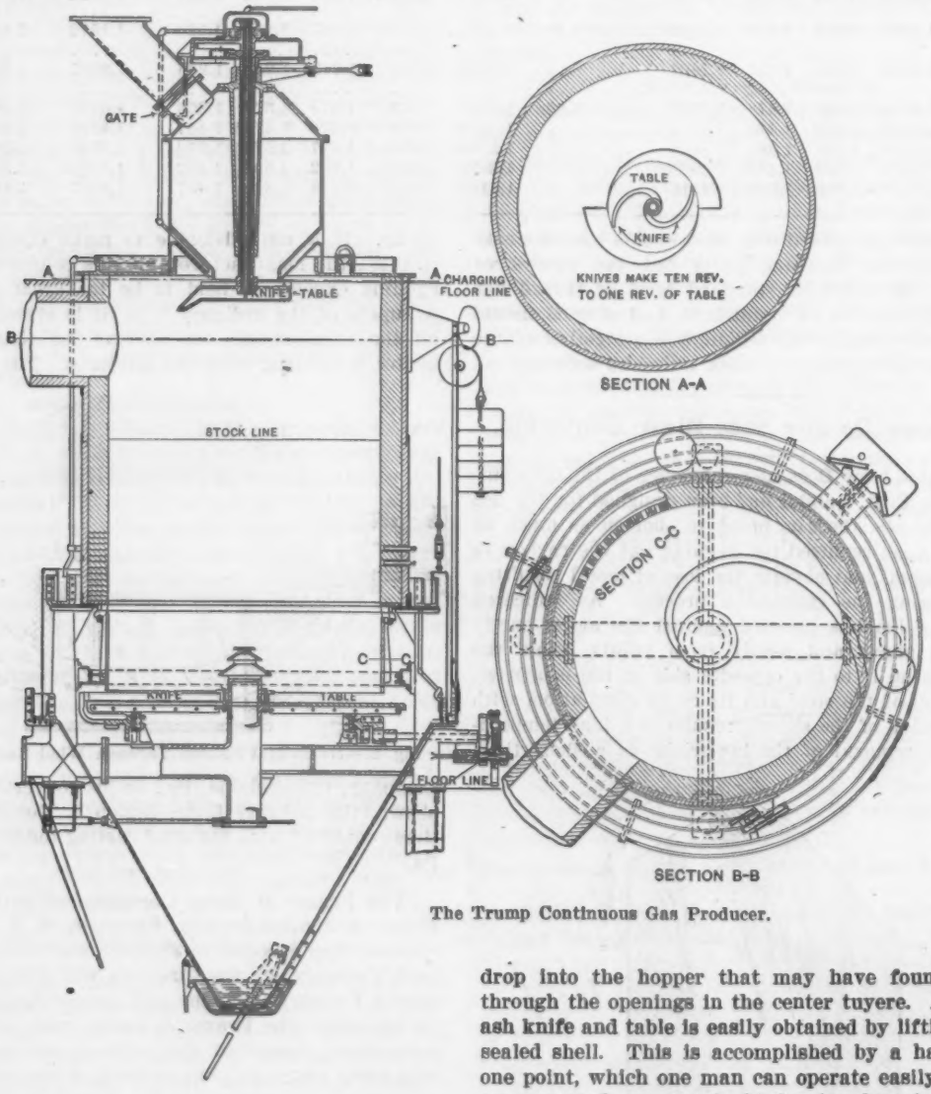
Company, Philadelphia, Pa., builds converters of the type shown, the designer being Selden S. Deemer, for a long time connected with the steel casting industry at Chester, Pa.

The Frazer & Jones Company.—The capital of the Frazer & Jones Company, Syracuse, N. Y., has been increased from $100,000 to $500,000, and at a meeting to be held February 26, the directors will vote to absorb the Solvay Foundry Company and operate its business in the future under the Frazer & Jones name. The two have been closely connected, their officers and Board of Directors being identical. The product of the Solvay Foundry is used almost entirely by the Frazer & Jones Company in manufacturing saddlery hardware. No definite plans have as yet been outlined as to improvements or extensions to the plants during the present year, although it is probable that a number of minor improvements will be made. At the directors' meetings held last week the following were elected for both companies: Fred Frazer, O. P. Letchworth, H. S. Holden, W. S. Carr and L. E. Jones. The officers chosen for the ensuing year were: President, Fred Frazer; vice-president and secretary, O. P. Letchworth; treasurer, H. S. Holden.

A compilation of gross earnings of the country's 51 principal railroads in January, shows 4¾ per cent. increase over the same month in 1908, but the 1908 returns showed a decrease of 8¾ per cent. from 1907; this year is still considerably behind the "boom period." The companies are earning more than in 1905 or 1904, and probably more than in any preceding year, partly because of increased average mileage.

The Trump Continuous Gas Producer.

The development of the gas producer has been in the direction of increasing the amount of coal gasified per unit of producing capacity and the reduction of the labor required in operating. This has been accomplished by the adoption of mechanical poking or stirring of the fuel bed, the continuous and even distribution of the coal in feeding, and in the introduction of the hopper bottom producers to replace the usual water seal. In this latter type the ashes are drawn off once a day into a narrow or standard gauge car, but in the usual water seal producer these must be removed by hand and shoveled on a conveyor or wheeled on cars. All these designs are efforts to cheapen the cost of making gas from bituminous or anthracite coal and to secure gas of more uniform quality.



The Trump Continuous Gas Producer.

The above mentioned results are secured in an ingenious way by the Trump patented producer, shown in section in the illustration. The novel features are the means of feeding the coal and removing the ashes continuously. The coal feed is accomplished by using the Trump ash knife mounted on a table, each half of which is of spiral shape, as indicated in one of the horizontal sections. The knife and water cooled table revolve at different rates of speed, thus delivering the coal on the fuel bed uniformly from the center to the circumference. In this design the feeding knife is of sufficient depth and strength to prevent any clogging of the feed in case a large lump finds its way into the hopper.

The removal of ashes is accomplished by a revolving deflector or Trump knife, so designed as to give a radial thrust to the ashes. In operation the table is stationary and the knife is slowly revolved, cutting a section of the ashes out from under the fire, and dropping the whole bed of fuel and ashes in pie shaped segments on the table, thus repeatedly shearing the fire bed and preventing the formation of masses of coke.

The fuel is fed continuously and the ash knife may be run continuously at a slow speed—20 to 40 in. each hour. In this way the bed is kept level all around. The position of the fire zone is determined by introducing ½-in. round bars through small poke holes in the shell of the producers about the level of the center tuyere. After being left 15 min. they are withdrawn and, according to the color of the rod, the speed of the knife is modified to take out less or more ashes. The blast is admitted through the center tuyere and through the grates above the ash table, the amount of blast thus distributed is regulated by the valve in the air pipes under the center tuyere. This valve also serves to permit any ashes to drop into the hopper that may have found their way through the openings in the center tuyere. Access to the ash knife and table is easily obtained by lifting the water sealed shell. This is accomplished by a hand wheel at one point, which one man can operate easily. The ashes are removed once each 24 hr. by dropping the water sealed pan at the bottom of the conical hopper, the discharge being made into standard or narrow gauge ash cars.

It is stated that a 10-ft. producer of the Trump design will gasify 35 tons per day of noncoking bituminous coal, nut size, and 30 tons per day of nut and pea coal mixed. With fine anthracite the greatest diameter in use is 7 ft., and the producers will gasify 7 tons of such coal per 24 hr.

When the gas is used hot for metallurgical purposes, the calorific efficiency of the producer plant is put at 85 per cent., and if the gas is cooled to 75 or 80 degrees F., the efficiency is counted at about 80 per cent. These high claims of efficiency are based on continuous coal feed and removal of the ashes. Analyses of the ashes over long periods show only 3.5 per cent. carbon, and to the eye they appear red or white, dependent upon the kind of coal in use. The continuous operations of the producer with continuous feed and discharge gives a very uniform quality of gas, especially adapted to gas

engine use; increases the amount of ammonia in recovery plants and gives high capacity with coking coals, largely removing the trouble of hand poking.

The power required has been found to be, as the knife is usually run, one revolution in 6 hr., considerably less than 1 hp., and about double that to start. For a plant of 8 to 10 producers which could gasify 200 tons of bituminous coal per day of 24 hr., one man would be required on top each turn and one below. These, with a foreman, would constitute the force necessary to operate the plant.

The producers were invented by Edwin N. Trump, Syracuse, N. Y., formerly vice-president of the American Society of Mechanical Engineers, and are now being put on the market by Ladd & Baker, Inc., Real Estate Trust Building, Philadelphia, Pa.

Queen City Shaper Manufacture.

Two important operations in the manufacture of a heavy shaper, the boring of columns and rocker arms, are illustrated herewith, as performed at the works of the Queen City Machine Tool Company, Cincinnati, Ohio. It is argued that the principal sources of trouble in lightly built shapers are the great number of holes and joints, the excessive twist to the drive and the constant tendency to overhang bringing about loss of belt power, through friction and buckle of parts, resulting in loss of effectiveness at the point of the cutting tool, unless the design and construction are such as to do away with these weaknesses.

The illustrations are intended to convey the manner in which this shaper builder has eliminated all bind and buckle and reduced friction to the minimum in the working parts. In Fig. 1, showing the boring of columns, attention is called to the fact that all holes in the jig are cast iron bushed, providing for the maintenance of original centers. Using this jig is claimed to insure accuracy and interchangeability. It is of true box pattern, both ends of the large boring bars being supported and

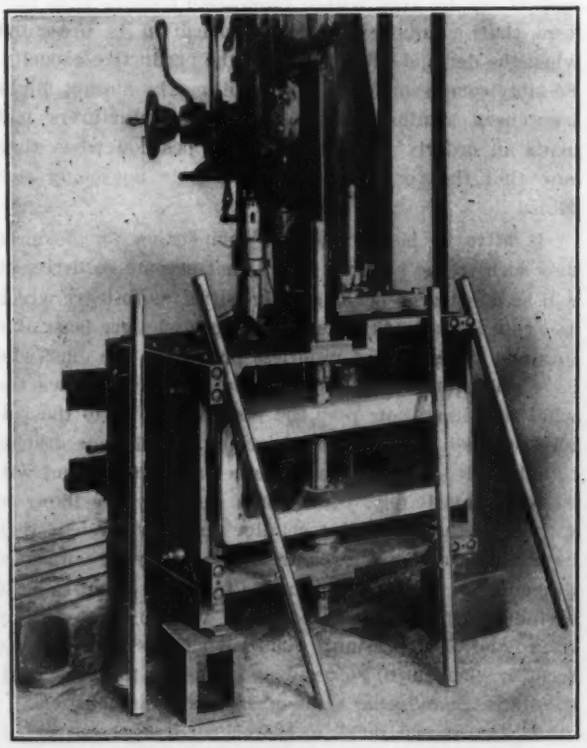


Fig. 1.—Boring the Column of a Heavy Queen City Shaper.

provided with knuckle joints. The holes in the column are first rough bored, so that only a light cut is taken with the special finishing cutter. This insures the proper distancing and alignment of shafts, and as all gears are turned to gauge and cut with special cutters, the result is claimed to be as near perfection as it is possible to approach. The connecting work between the bull wheel

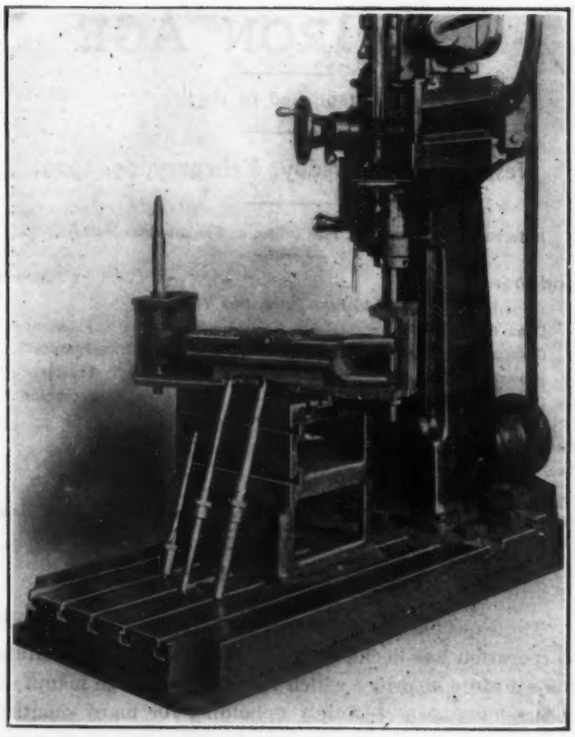


Fig. 2.—Boring the Rocker Arm.

and rocker arm is also carefully jigged to the more nearly accomplish certainty in operation.

The top and bottom holes in the rocker arm must also be carefully bored at exact right angles to the planed ways of the sliding block, as the slightest twist here is fatal to good results. Fig. 2 shows the jig in working position for this operation. All shafts are accurately ground, insuring smooth running and long life.

The Stevens Institute Alumni Dinner.

The Alumni of the Stevens Institute of Technology had their annual dinner February 19, at the Hotel Astor. There was an attendance of about 350. The toastmaster was Henry Torrance, Jr., and the speakers were President Alexander C. Humphreys of Stevens Institute, who spoke about the institute; Alfred Noble, past president of the American Society of Civil Engineers, and a former member of the Panama Canal Commission, who advocated the lock system for that great enterprise, and gave an authoritative review of the whole project; Col. H. G. Prout, vice-president of the Union Switch & Signal Company, formerly editor of the *Railroad Gazette* and at one time Governor of Equatorial Africa, who spoke of the ethical and ideal aspects of engineering; John A. Bensel, Commissioner of the Board of Water Supply of New York City, whose subject was New York's water supply, and Col. George Harvey, who wittily commented on the remarks of the preceding speakers, and, in more serious vein, said that now that the type of Panama Canal was decided upon by a highly competent Board of Engineers, it was impertinent for laymen to criticise and abuse this project any longer, but that all good Americans should support the authorities and push the work to a successful finish.

President Humphreys announced that at the next meeting of the Board of Trustees of Stevens Institute the following new trustees would be elected: Dr. H. S. Pritchett, president of the Carnegie Foundation for the Advancement of Teaching; John Aspinwall, president of the Fabrikoid Company, Newburgh, N. Y.; Dr. D. S. Jacobus, advisory engineer to the Babcock & Wilcox Company, and Anson W. Burchard, assistant to the president of the General Electric Company. Among those present were a large number of Stevens graduates, occupying prominent positions in manufacturing and engineering lines.

THE IRON AGE

Established in 1855.

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Open Markets for Steel Products.

The expected has happened. The United States Steel Corporation has decided that it will no longer maintain the schedule of prices which it and other large manufacturers have been resolutely upholding for many months. So large a part of the current business has been going to those who were either willing or compelled to make lower prices that the situation finally became unendurable. It is known that the sales managers of the various subsidiary companies have long been urgent in their appeals for permission to meet the conditions which have been steadily causing them to lose more and more of their customers, but it was not until last Thursday that those in supreme authority yielded to their wishes. The action taken by the corporation goes much farther than had been predicted. It was at first presumed that a definite cut in prices would be made, with a time limit for those disposed to take advantage of the opportunity thus afforded. But no time limit has been fixed and no minimum has been named on the prices to be accepted. This action was decided upon after a meeting of the directors of the American Iron and Steel Institute to which many of the leading manufacturers of iron and steel were invited. Following the meeting, Chairman E. H. Gary of the United States Steel Corporation issued this statement:

Following the panic of October, 1907, the iron and steel industry was in jeopardy. Jobbers and consumers throughout the country had purchased large stocks at prices prevailing when conditions were favorable, and these were undisposed of. Pending contracts for construction, which involved large purchases of iron and steel, were extensive. Contracts for new furnaces, mills and equipment, and for raw and semifinished material, had been made by large numbers. An immediate and radical reduction in prices would have meant bankruptcy to multitudes. To prevent disaster and ruin, and at the request of scores who were interested, a large percentage of the leading men connected with this industry met to advise with each other in regard to the best interests of all concerned, and including the general public. Various meetings followed from time to time up to the middle of June, 1908. Accurate reports of these meetings were given to and published by the newspapers. Partly, at least, as a result, stability of prices, as distinguished from wide and sudden fluctuations, existed until about the beginning of 1909, although no agreements were made to maintain prices, and notwithstanding a small percentage of manufacturers stood aloof from the conferences.

For a year preceding January 1, 1909, there was a gradual, though not entirely regular, improvement in the iron and steel trade, and an increase in the sales made. As an illustration, the average daily bookings of new business of subsidiary companies of the United States Steel Corporation were 8322 tons for December, 1907; 18,349 tons for June, 1908, and 29,685 tons for December, 1908. During these months the total capacity of these companies was about 36,000 tons per day.

Until within the last 48 hours it has been the belief of many, if not most, of the leading manufacturers of iron and steel that no general reductions in prices were necessary or desirable. However, during the last two days many of the manufacturers have been in conference for the purpose of giving to one another all the information and facts obtainable concerning actual conditions in detail. It appears that for one reason or another, including particularly the tariff agitation, many of the smaller concerns who have not been disposed to co-operate during the last year have become more or less excited and demoralized, and have been selling their products at prices below those which were generally maintained. This feeling has been somewhat extended and has influenced unreasonable cutting of prices by some of those who were opposed to changes, but felt compelled to meet conditions in order to protect their customers. As a result of these conditions there has been a material decrease in new business during the last month, for the reason, as stated by consumers, that they proposed to wait until after they were satisfied bottom prices had been reached.

In view of the circumstances stated and the further fact that the stocks on hand at the time the panic occurred have been disposed of, and the contracts in force at that time have been completed or taken care of so that the necessities for the maintenance of prices which formerly existed have been modified, the leading manufacturers of iron and steel have determined to protect their customers, and, for the present at least, sell at such modified prices as may be necessary with respect to different commodities in order to retain their fair share of the business. The prices which may be determined upon and the details concerning the same will be given by the manufacturers to their consumers direct as occasion may require.

The friendly relations which have existed between the principal manufacturers will continue, and the intercourse between them for the purpose of giving and receiving information and the expression of opinions concerning trade conditions will not be abandoned.

This temperate and even amiable declaration constitutes the most momentous occurrence in the steel trade in recent years. It means the abandonment, at least for an indefinite period, of the attempt of the large manufacturers to regulate the steel trade in the interest of stability, in the hope of avoiding the alternations of very high and ruinously low prices. While the fact has been demonstrated that in a period of intense activity the market can be kept within reasonable bounds, it is now seen that a totally different proposition is presented when the demand falls far below the productive capacity. Possibly some semblance of controlling the market might have been attained if the leading manufacturers had made an orderly retreat from their position when they saw that the post-election activity was not being sustained.

It is to be hoped that the competition for business now seen in the steel trade will not become so fierce, or will be affected by personal animosities, as to leave wreck and ruin in its track. As usual, those who are least able to stand the strain of profitless prices are the ones who have precipitated this state of affairs. Having sown the wind they must now reap the whirlwind. As to the volume of business which the lowering of prices is desired to induce, it is questionable whether an improvement will be seen immediately. Consumers generally are likely to wait until they recognize genuine bargains, even if they have the means or the requirements justifying purchases in quantity. It seems reasonable to suppose that in spite of inducements now offered many will continue to buy from hand to mouth until tariff revision assumes definite form or even until the crop prospects of the year shall have given convincing signs of a satisfactory outturn.

As far as the tariff is concerned, it appears certain that all fears may now be dismissed that a sharp reduction in prices might be precipitated by a heavy cut in the steel duties. The open market on steel products has forestalled anything coming from that direction.

Perhaps the worst feature of the new state of affairs, from the viewpoint of the steel manufacturer, is that the effect of the low prices now likely to be made may not be overcome for a year or more. Large con-

sumers may be expected to take advantage of opportunities presented to make contracts for their requirements running far into the future. This has been an incident of previous occasions of unrestrained competition for business. In these days of great productive capacity of individual works it is more than likely that the search for tonnage will be vigorous even if it entails engagements projected far into the future. While it must be conceded that consumers will be greatly benefited by the lowering of prices, the wiping out of profit in the manufacture of steel may have its sinister side in checking the development of further facilities for production for some time to come.

Exports of Iron and Steel Manufactures.

Statistical presentations of our iron and steel exports usually fail to emphasize the preponderance of exports of iron and steel manufactures over exports of iron and steel proper. The Government statistics give the weight of such exports as scrap, pig iron, unfinished steel, finished rolled products, and such products as structural material, pipes and fittings, wire and nails, on which some relatively small work has been done after the material has left the rolls. These tonnage statistics are compiled monthly in our columns. Other lines, such as hardware, castings, engines and other machinery, are given only as to value, and the Government "total of iron and steel and manufactures thereof" includes the value of the tonnage lines as well as the value of the manufactures. Segregating the value of the tonnage lines, however, it is found that they constitute only about 30 per cent. of the total value, although that total value does not include agricultural machinery, which has, perhaps, as much claim to be included under manufactures of iron and steel as have cutlery, sewing machines or typewriters.

The accompanying tables present in detail for the past three calendar years (1) the weight of the tonnage lines exported (2), the values of these same materials (3), the values of the iron and steel manufactures, the weight of which is not returned:

Tonnage Iron and Steel Exports.—Gross Tons.

	1906.	1907.	1908.
Pig iron	83,317	73,703	46,396
Scrap	11,742	25,689	21,834
Bar iron	56,025	23,743	8,224
Wire rods	5,895	10,697	7,412
Steel bars	32,077	74,464	43,881
Billets, blooms, &c	192,616	79,991	112,177
Hoop, band, &c	5,405	8,601	4,339
Steel rails	328,036	338,906	196,510
Iron sheets and plates	17,054	40,651	44,100
Steel sheets and plates	93,646	82,045	60,893
Tin and terne plates	12,082	10,203	11,878
Structural iron and steel	112,555	138,442	116,878
Wire	174,014	161,223	136,167
Cut nails	7,568	6,929	7,019
Wire nails	46,237	42,189	26,510
All other, including tacks	5,687	7,672	5,377
Pipes and fittings	141,784	176,831	114,371
Totals	1,325,740	1,301,979	964,266

Tonnage Iron and Steel Exports.—Values.

	1906.	1907.	1908
Pig iron	$1,506,774	$1,508,938	$789,318
Scrap	166,437	339,631	329,608
Bar iron	2,575,905	1,092,634	362,909
Wire rods	221,679	465,757	277,694
Steel bars	1,756,819	3,588,177	2,069,642
Billets, blooms, &c	4,094,659	2,013,319	2,674,524
Hoop, band, &c	242,776	395,758	223,073
Steel rails	8,903,411	10,411,072	6,021,549
Iron sheets and plates	1,139,526	2,902,025	2,985,538
Steel sheets and plates	4,081,915	4,262,582	3,422,031
Tin and terne plates	1,001,688	897,645	1,021,472
Structural iron and steel	6,140,861	7,784,618	6,289,610
Wire	8,770,042	9,164,289	7,270,794
Cut nails	340,526	354,802	364,202
Wire nails	2,232,051	2,367,544	1,356,047
All other, including tacks	498,970	647,259	457,737
Pipes and fittings	8,541,050	11,789,631	7,481,575
Totals	$52,215,089	$60,045,681	$43,397,323

Exports of Iron and Steel Manufactures.—Values.

	1906.	1907.	1908.
Builders' hardware	$14,273,137	$15,903,412	$12,884,074
Car wheels	295,458	348,142	387,662
Castings, n.e.s.	2,033,527	2,866,754	1,546,841
Cutlery	586,960	739,513	877,600
Firearms	2,493,979	3,032,992	1,749,080
Cast registers	2,664,113	2,477,425	2,229,474
Electrical machinery	8,274,753	9,735,230	6,956,722
Laundry machinery	652,331	711,912	627,368
Metal working machinery	7,913,327	10,142,835	5,205,606
Mining machinery	2,837,240*	6,125,951	3,862,973
Printing presses and parts	2,047,773	1,802,458	1,562,948
Pumping machinery	4,122,703	3,722,847	2,827,428
Sewing machines and parts	7,845,228	8,472,176	6,204,436
Shoe machinery	1,470,900	1,219,013	1,029,610
Fire engines and parts	25,978	9,250	35,719
Locomotives and parts	7,430,277	9,080,337	6,319,309
Stationary engines	1,931,038	2,489,691	3,119,813
Boilers and engine parts	2,633,210	3,242,959	2,704,981
Typewriters and parts	5,694,244	6,664,164	6,318,219
Windmills and parts	440,691*	1,216,235	1,305,878
Woodworking machinery	936,288	1,386,881	1,069,057
All other machinery	26,334,097	26,688,256	22,769,235
Safes	327,031	354,387	257,276
Scales and balances	947,538	996,266	868,294
Stoves, ranges and parts	1,317,929	1,326,503	1,036,527
All other	14,810,749	16,264,969	13,959,661
Totals	$120,340,499	$137,021,100	$107,715,791

* Not separately stated prior to July 1, 1906.

The sum of the two latter tables makes up the total iron and steel as ordinarily reported. These totals are given below for the past three years, with the exports of "agricultural implements, and parts of" appended:

Iron and Steel Exports.

	1906.	1907.	1908.
Tonnage lines	$52,215,089	$60,045,681	$43,397,323
Manufactures	120,340,499	137,021,100	107,715,791
Totals	$172,555,588	$197,066,781	$151,113,114
Agricultural implements	24,744,762	25,597,272	25,264,939
Grand totals	$197,300,350	$222,664,053	$176,378,053

The proportion of iron and steel, tonnage lines, to total iron and steel exports, not including agricultural implements, was 30.26 per cent. in 1906, 30.47 per cent. in 1907 and 28.72 per cent. in 1908, an average of 30 per cent. for the three years. The proportion referred to total iron and steel, including agricultural implements, was 26.46 per cent. in 1906, 26.97 per cent. in 1907 and 24.61 per cent. in 1908, an average of 26 per cent. for the three years. These are smaller percentages, probably, than would generally be assumed. The export trade in manufactures of iron and steel is larger, proportionate to the trade in the tonnage lines, than it is generally given credit for.

It would be interesting to compare these exports with total production, with a view to ascertaining which lines show the largest exports in proportion to total production, but data are not available. The tonnage exports have comprised about 5 per cent., roughly speaking, of the total weight produced. In point of value the proportion is probably slightly less, but no exact statement can be made, chiefly on account of the difficulty of defining the standing in the business of such unfinished materials as pig iron and billets. With manufacturers of iron and steel only occasional comparisons can be made, but they tend to show pretty strongly that the percentage exported is much larger than is the case with the tonnage lines of iron and steel. Thus the last census, covering 1904—a poor year, however—showed the value of agricultural implements produced as $112,000,000, which compares with exports of $25,000,000 in each of the past three years; the same census showed $46,000,000 of hardware produced, compared with $11,000,000 to $16,000,000 exported in the past three years; the census showed less than $8,000,000 of "safes and vaults," while the exports of "safes" have amounted to almost $1,000,000; the census gave $21,000,000 for sewing machines, while the exports have been $6,000,000 to $8,500,000; the census total for "typewriters and supplies" is $10,640,495, while

exports of "typewriters and parts" were $5,694,244 in 1906 and $6,664,164 in 1907, quite a remarkable relation even though the census figure is for 1904. Few other comparisons can be made, on account of omission or insufficiency of classification in the census report. Thus it is somewhat disappointing to find that the census table does not mention locomotives in any form, while we exported over $9,000,000 worth in 1907. It would be more interesting for the census to report specifically on the locomotive industry than on such lines as axle grease, artificial limbs, flags and banners, ivory and wood rules, &c., which are treated in careful detail. Enough appears in the census reports, however, to confirm the view which would naturally be entertained from a glance at the export statistics, that the manufacturers consuming the tonnage lines of iron and steel export a larger proportion of their product than do the manufacturers producing these tonnages lines.

The value, per gross ton, of the tonnage exports was as follows: 1906, $39.39; 1907, $46.12; 1908, $45.01, making an average for the three years of a trifle over $40 a ton. The variation from year to year is due chiefly to the difference in distribution, there having been a proportionate decrease in the cheaper materials and a proportionate increase in the more expensive materials. It would appear that there has been no important change in the prices received for different commodities.

The average valuation is fairly high, while an examination of the tonnage table shows that it is chiefly the more finished products of the iron and steel industry which are exported. The tonnage of pig iron exported is almost negligible, while the exports of ingots, billets, blooms, sheet bars, &c., have been considerably less than 1 per cent. of our total sheet production. In wire nails, on the other hand, nearly 10 per cent. of the total production has been exported, and about the same proportion holds good with pipes and fittings.

This trend in iron and steel products proper paves the way for the heavy exports in manufactures of iron and steel which are to be observed in the detailed table. Averaging the past three years, one individual line, builders' hardware, shows over $10,000,000 per year, while five lines—electrical machinery, metal working machinery, sewing machines, locomotives and typewriters—each show more than $5,000,000 a year. So specialized a line as cash registers shows exports well above $2,000,000 a year, while windmills show over $1,000,000 and scales and balances almost reach that figure.

So much attention has been directed, particularly of late, to the exportation of tonnage lines in iron and steel, relatively little attention being paid to the exports of manufactures of iron and steel, that it may be well to note that, using the 1908 figures alone, we exported a greater value in windmills and in scales and balances than we did in pig iron, a greater value in pumps and pumping machinery than in crude steel, a greater value in sewing machines or in locomotives than in steel rails, and twice as much in builders' hardware as in rails or structural material. Our exports of agricultural implements were almost 60 per cent. as large as our exports of all tonnage lines in iron and steel, while our exports of agricultural implements and other manufactures were four times as large as our exports of the tonnage lines.

There is no means of estimating closely the quantity of iron and steel involved in these exported manufactures, but when they had a value four times as great as that of fairly well finished iron and steel, which weighed in 1908 close to 1,000,000 tons, and when a large part is made up of rather heavy machinery, it is not unfair to conclude that the actual pig iron involved in their manufacture was quite a respectable tonnage, running well into the hundreds of thousands of tons. The value, of course, is the principal item, as it represents large wage distributions and the bringing of a great deal of money into the country.

CORRESPONDENCE.

A National Fund for Victims of Coal Mining Accidents

To the Editor: In view of the frequency of recurring accidents in the coal mines of this country and the recent movement to collect subscriptions for the benefit of those widowed and orphaned by certain of the more serious disasters, is not the time propitious for starting a national fund to which every coal operator in this country should contribute monthly or annually a fixed sum per ton of product? One mill per ton would seem to be within the means of the smallest operation. But such a fund, vested in and administered by a trust composed of three men of national reputation, appointed by the President of the United States, with the Governors of the coal producing States as an advisory commission, would meet all requirements.

It would seem that such a fund might also be utilized to carry out important investigations looking to the development of safety appliances and improved methods on broader lines than those now being pursued by the Government. In Pennsylvania a bill to tax coal operators with similar objects in view has been voted down on the theory that such tax would ultimately fall upon the consumer. But surely a general contribution of one mill per ton would not be worth considering in such connection. If practical the scheme has great merit over any system of taxation. Is it practical? OPERATOR.

NEW YORK, February 20, 1909.

A Large Export Order for Carborundum Wheels.—The Carborundum Company, Niagara Falls, N. Y., has just completed and shipped to Buenos Ayres, Argentina, 4 tons of carborundum wheels, to be used in cutting the marble for the National Government Building. The carborundum wheels were selected for this important work only after the keenest competition with other wheels. The building is to be built entirely of marble, and when completed will be one of the most costly and beautiful in all South America. All of the coping, trimming and cutting of the marble to enter into the building will be done with carborundum wheels. The big order included in all about 105 wheels, varying in size from 14 to 26 in. in diameter. This is believed to be the largest single shipment of abrasive wheels ever sent to South America. The order was put through the factory in record time, as the wheels must arrive in Buenos Ayres so as to meet a shipment of special machinery ordered from Germany by Pablo Besano, the architect, and to which the carborundum wheels are to be attached.

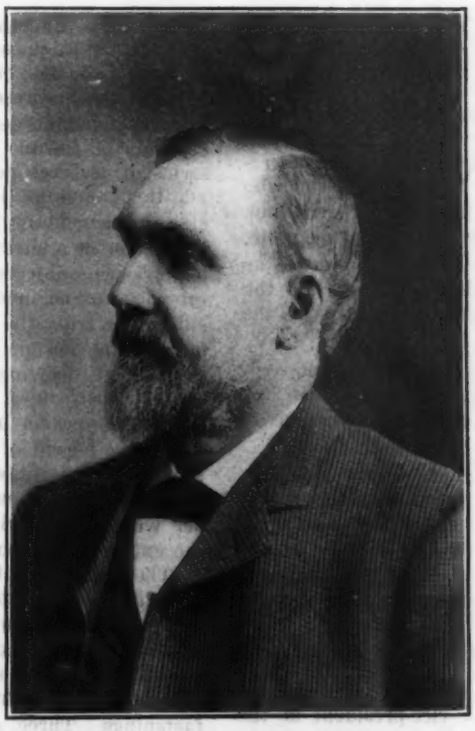
The Deforest Company.—Contracts for a new sheet and tin plate plant, to be built at Niles, Ohio, will be closed within the next two weeks. Some time ago Wade A. Taylor and Charles S. Thomas, formerly president and general manager, respectively, of the Empire Iron & Steel Company, Niles, secured a 50-acre site on which it was announced that they intended to erect a new plant. A company has now been incorporated for the purpose under the name of the Deforest Company. The plant will consist of six sheet mills and six tin plate mills, with a total capacity of approximately 5000 tons per month. There will also be a subsidiary company to be known as the T. & T. Metal Roofing Company, which will manufacture corrugated and galvanized sheets. The site is on the Erie and the Baltimore & Ohio railroads, and is of sufficient size to provide room for a steel plant, should the company decide to erect one later.

OBITUARY.

Edwin Reynolds.

"With the death of Edwin Reynolds a great man has departed—great alike in his grasp of large engineering principles and technical details; great in his mastery of commercial problems; great in his foresight and faith in the development of this country; great in his relations to civic and industrial conditions and questions. It is seldom that one man combines so many qualities, any one of which would bring success. Mr. Reynolds' services cannot be overestimated. He was truly one of the empire builders, and his large contributions to engineering are recognized the world over."

This, in the words of Walter H. Whiteside, president of the Allis-Chalmers Company, fittingly characterizes the career of the man who was, for more than 30 years, the dean of American engineers; a man who, by sheer force of character and ability, without the advantage of university training, raised himself from the position of machinist to that of the foremost mechanical technician of the world, in charge of the great engine building shops with which his name is inseparably connected. Even the brief outline of his life's work is one to command admiration and inspire emulation.



EDWIN REYNOLDS.

Born in Mansfield, Conn., on March 23, 1831, Edwin Reynolds attended the district school, and, when he reached his sixteenth year, was apprenticed to A. P. Kenney, a local machinist. Here he eventually became foreman and soon afterward started on a journeyman's tour of various shops in lower New England, adding bit by bit to his knowledge of sound mechanical principles, no detail of which appears to have escaped him.

Later Mr. Reynolds went West and settled for a time in Aurora, Ind., as superintendent of the shops of Stedman & Co., who were largely engaged in building engines, sawmill machinery, drainage pumps, &c., for the Southern trade. This business having been practically wiped out by the Civil War, he returned to the East and was employed in a number of machinery building plants until, having attracted the attention of Geo. Corliss, he was offered a position in the works of the Corliss Steam Engine Company, at Providence, R. I., where he rose to become general superintendent. Here it was that Mr. Reynolds acquired, during the 10 years dating from 1867, the most valuable details of the knowledge which was afterward to make him famous, and his share in designing the celebrated Centennial engine, which was exhibited at Philadelphia in 1876, led directly to a proffer, by Edward P. Allis, of the general superintendency of the vigorous young company which the latter had established at Milwaukee in what are now the Reliance shops of the Allis-Chalmers Company, as rebuilt and extended under Mr. Reynolds' direction.

Here, at his new post, with practically unlimited opportunity for initiative, Edwin Reynolds entered upon the bold pioneering in design which was to mean so much for the industrial welfare and prominence of this country. As a consequence of his inventions, adaptations and discoveries, the Edward P. Allis Company soon became known in every quarter of the civilized globe, and many of the types of machinery originated in that earlier day are, with some modifications, still regarded as standard.

While his somewhat spectacular performance in designing the New York Subway engines, during a trip on the train between Chicago and New York, is often referred to as a great achievement, this feat palls into insignificance when compared with the steady work of years in bringing to their present high state of efficiency the blowing engine, compressor, hoist and pumping engine, as well as the standard designs of horizontal and vertical power engines, which, under the name of Reynolds-Corliss, are installed throughout the earth, contributing to the efficiency of manufacturing plants of every description.

"The first blowing engine designed by Mr. Reynolds," to quote the words of a former associate, "caused a veritable upheaval of precedent." This was to be used in the works of the original Joliet Steel Company, and competitive designs had been submitted by leading engineers in the United States and Europe, but, while all except that of Mr. Reynolds followed well established practice, his embodied a radical departure from accepted ideas. Fortunately for the progress of the iron industry, Mr. Reynolds' scheme was adopted. The engine showed such excellent results that the attention of Andrew Carnegie was attracted, and this led to orders so often repeated that machines of similar construction soon became used to the practical exclusion of all others. After more than 25 years of continuous experimenting the essential features of this design have not been improved upon.

The first triple expansion pumping engine of the vertical type, which is now built and used everywhere in this country, as well as abroad, for high duty water works service, was designed by Edwin Reynolds for the North avenue station at Milwaukee and has been in continuous operation ever since, maintaining a good record for economy. In the many years that have elapsed since this was installed, the original design has not been bettered to any material extent, although the best engineers of the world have occupied themselves with the problem.

And so one might go on enumerating the services which Edwin Reynolds has rendered in the world of engineering; but his achievements are too generally known to require extended comment at this time, and it is too early yet for an adequate appreciation of his worth to the progress of industry and civilization. That will follow in due course.

At the time of his death Mr. Reynolds was consulting engineer of the Allis-Chalmers Company, although the lingering illness of the past three years had unfitted him for active duty, and he took a great interest to the last in the magnificent new works at West Allis, which had been laid out on a strictly engineering basis, after his plans, at the time the Edward P. Allis Company became merged in the new organization.

He was also interested in a number of other plants of Milwaukee and vicinity; had been the first president of the National Metal Trades Association; was a past president of the American Society of Mechanical Engineers, and bore the degree of LL.D., conferred upon him by the University of Wisconsin, on the wall of whose college of engineering his name has been carved—an unusual distinction for a living savant.

Mr. Reynolds passed away peacefully at his residence in Milwaukee on February 19. He leaves a widow.

BENJAMIN CUSHING BOWKER, secretary and treasurer of the Ames Plow Company, died at Neponset, Mass., February 17, aged 64 years. He was a native of Nepon-

set, and soon after leaving school entered the employ of the Ames Plow Company, with which he was identified for 43 years. He leaves a widow and two sons.

ERVIN SAUNDERS of D. Saunders' Sons, Yonkers, N. Y., died February 17.

HARRY WEHR, president of the Canton Iron & Steel Company, Baltimore, Md., died February 14, after a short illness, aged 38 years. He was a native of Baltimore and formed the company 12 years ago. He leaves a widow, a son and a daughter.

PERSONAL.

James R. Petley, who has been associated for many years with the Christensen Engineering Company and its successors, being latterly treasurer and purchasing agent of the National Brake & Electric Company, recently resigned to enter business for himself as a manufacturers' agent, with offices in the Caswell Building, Milwaukee, Wis.

David Hall, who resigned some weeks ago as assistant chief engineer of the Bullock Electric Mfg. Company, is now with the Westinghouse Electric & Mfg. Company at Pittsburgh.

The University of Pittsburgh on February 12 honored Edward G. Acheson, president of the International Acheson Graphite Company, Niagara Falls, N. Y., by conferring upon him the degree of Doctor of Science, in recognition of the many successes he has scored as results of his scientific research. It was Mr. Acheson who gave to the world the abrasive known as carborundum, also the product, siloxicon, as well as artificial graphite. His electric furnace work has given him prominence as probably the greatest electric furnace expert in the world. His work has added very materially to the world's wealth.

Horace Hammond of the Hammond-Byrd Company, Birmingham, Ala., who has been recuperating in the West for several months, is expected in Birmingham to assume the duties of his office about April 1.

George L. Knight, formerly manufacturers' agent at Nashville, Tenn., has been elected secretary and general purchasing agent of the Pittsburgh Gage & Supply Company, Pittsburgh.

Archibald Johnston, vice-president of the Bethlehem Steel Company, sailed for Europe February 18, to join Charles M. Schwab.

President F. N. Hoffstot of the Pressed Steel Car Company has gone to Europe, sailing February 18.

Charles Booth, recently elected vice-president of the Chicago Pneumatic Tool Company, who for the past few months has been managing the New York office, will shortly move to Chicago and make his headquarters in the main office of the company.

A. B. Neumann resigned his position as chief engineer of the Indiana Steel Company February 1 and is temporarily located at 1539 First National Bank Building, Chicago. He will take a few weeks rest before engaging in a new line of work.

F. P. Van Horn, formerly assistant treasurer, has been made treasurer of the Pressed Steel Car Company, Pittsburgh.

Frank C. Harper has been made assistant secretary and assistant treasurer of the American Sheet & Tin Plate Company, Frick Building, Pittsburgh. He was formerly assistant cashier of the Union Savings Bank, Pittsburgh.

F. H. Moyer, formerly at the Clairton Works of the Carnegie Steel Company, has been appointed chief engineer at the plant of the Indiana Steel Company, Gary, Ind.

E. W. Oglebay, of Oglebay, Norton & Co., Cleveland, sailed Saturday for a three months' stay in Europe.

J. A. Farrell, president of the United States Steel Products Export Company, will go South this week to recuperate from an illness from which he has been suffering since the opening of the year.

Hugh Conrad of the Ingersoll-Rand Drill Company has returned from a trip around the world, his itinerary including Japan, China and Australia.

New Publications.

The Ironmonger Metal Market Year Book, 1909.—Pocket sized handbook, 4 x 6½ in.; 86 pages. Bound in stiff cloth. Published by the *Ironmonger*, London, England.

This is the third year of publication. It gives valuable statistics of the metal and iron trade not only of Great Britain, but Continental Europe and the United States. The price of copper and tin for every business day in 1908 is given, and the price of Banca tin as quoted in Amsterdam is likewise given. Tables give the production, consumption and import movements of the metals, as well as Scotch and Cleveland iron. The price of tin plates is likewise given for each week in the year 1908, and some statistics regarding the production and deliveries of iron in Germany are likewise included.

Elementary Machine Design. By J. D. Hoffman, Professor of Engineering, Purdue University. Size, 6 x 9 in.; pages, 254; cloth binding; illustrated; price, $2.50.

This book represents the course of instruction in elementary machine design given to the junior engineering students at Purdue University. It is the material of a series of lectures put in book form with revisions and additions, making it suitable for general work. It is strictly elementary but attended with references which the reader or student can consult to follow up more completely such subjects as he may be interested in. Being intended for beginners who are not competent to derive advantage from the usual treatises and reference books on machine design it presupposes only a knowledge of mechanical drawing and shop practice, and aims by simple illustrations to show the principles of examples so that the reader may apply them to similar cases and derive the benefit of independent work. In the introduction the author lays down an outline of a one-year's course of instruction in the subject of 36 weeks at 6 hr. per week, which will cover a scope commensurate with the extent of the book.

The first four chapters deal with materials used in machine construction; graphic statics and the simple stresses in tension, compression, shear and flexure; stresses continued in twist, and combined twist and flexure; discussions on shafts, flywheels, pulleys, belts, ropes, gears, screws and frictions; and cylinder, flat plates and fastenings. Three chapters follow dealing with three typical designs and their alternates, and after each of these chapters are a few blank pages on which notes or pictures or other variations of the application of the principles involved in that design may be inserted, thus encouraging the search for such in the literature issued by manufacturers. The final chapter is a collection of problems in kinematics of machines.

As a means of introducing the novice to the interesting field of effort with which it is concerned, the book should certainly prove valuable, and inasmuch as throughout its pages the practical question of economic production is borne in mind, it carries the instruction along in a way that should save the student from falling into a fault common among machine designers who, however ingenious in working out problems in mechanical movements, fail to appreciate the difficulties which the shop man will meet in trying to reduce the design to the working reality.

Vance and Henry B. McCormick, Harrisburg, have purchased the property of the Eureka Mining & Developing Company of Birmingham, Ala., consisting of two brown iron ore mines recently opened for commercial purposes, and approximately 400 acres of land in Russell County, Ala., supposed to contain a considerable quantity of brown ore. The price consideration for the property is said to have been $50,000.

The Southern Steel Company Conversion Basis.

According to the plan of reorganization of the Southern Steel Company, which has been accepted by some of the interests, as noted in these columns, it is estimated that after the fixed charges of $352,700 and the $420,000 of 6 per cent. dividends on the preferred are deducted from the estimated average annual net earnings of $1,200,000 of the new company, there should be left as surplus the sum of $427,000, which is equal to 4.27 per cent. on the common stock. In the reorganization scheme the noteholders, in lieu of cash, are placed on the same footing as the bondholders. The company's general creditors, instead of cash, receive 50 per cent. of their claims in the first refunding bonds and 75 per cent. in preferred stock. The old preferred stockholders receive 25 per cent. in the new common stock, common stockholders 5 per cent. in the new common stock, and in addition both classes of stockholders are given the privilege of subscribing at the rate of $10 a share for their old stock and receiving on account thereof 150 per cent. of the subscription in new preferred stock and 250 per cent. of the subscription in new common stock. The new issue of $7,000,000 non-cumulative 6 per cent. preferred stock compares with the former issue of $10,000,000 cumulative 7 per cent. preferred stock, while the new issue of $10,000,000 of common stock is against the $15,000,000 of common stock in the old company.

The bond and collateral note issues of the original Southern Steel Company and the three companies amalgamated with it are as follows:

Southern Steel Company:	
First mortgage 5 per cent. sinking fund 25-year gold bonds	$3,000,000
Five per cent. collateral gold notes	734,000
Georgia Steel Company:	
First mortgage 5 per cent. gold bonds	1,000,000
Second mortgage 5 per cent. gold notes	370,000
Lacey-Buek Iron Company:	
First mortgage 6 per cent. gold bonds	450,000
Chattanooga Iron & Coal Company:	
First mortgage 6 per cent. gold bonds	600,000

The new issue of $8,000,000 first and refunding bonds will be used in part in the gradual retirement of the above bonds. The bondholders will receive 4 per cent. a year for the first five years and then the former rate of 5 per cent. In consideration of their acceptance of the lower rate of interest at the beginning, they are to receive new preferred stock to the amount of $100 for each $1000 bond.

The Reorganization Plan Opposed.

George H. Schuler, holder of $2,200,000 of the common and preferred stock of the old company, submitted the following contentions to the United States Circuit Court at New York February 20, on a motion to make permanent the temporary injunction restraining the Reorganization Committee from carrying out its plan:

That according to the appraisement in the bankruptcy court the value of the property was $50,000,000, and according to the Reorganization Committee's valuation it was at least $27,000,000, with an assured income of $1,200,000; that the lack of equity consisted in the fact that the preference under the reorganization was given to those stockholders who advanced $10 per share for the subscription to the stock, while to those who were not able to make the subscription no substantial return was made; stockholders subscribing the $10 a share received 150 per cent. in preferred stock and 250 per cent. in common stock of the new company, while the stockholder who did not subscribe received but 25 per cent. of common stock for his preferred stock and only 5 per cent. of common stock for his common stock in the old company. It was also stated that the plan includes the turning over for the purposes of the reorganization all the assets of the old company.

The complainant claimed that the majority of the stockholders and the committee representing them stood in a fiduciary relation to the minority stockholders and owed them the duty to protect their interests and secure to them their just proportion of the income and proceeds of the property. The court reserved its decision.

Ores of the Cornwall Type in Pennsylvania.

For 168 years—since 1740—iron ore has been mined at the great Cornwall banks in Lebanon County, Pa. In the 56 years that have elapsed since "mining proper" was begun and the first sale of ore was made, the production has exceeded 21,000,000 tons, all taken from what is practically a single great ore body, though it contains extensive partings of barren rock.

The Cornwall ores are essentially magnetite, but they contain pyrite in amounts which make it necessary to roast them before they can be used in the blast furnaces. The iron content averages not far from 45 per cent., and analyses show, as rather constant chemical characteristics, low phosphorus, high sulphur, silica, lime and magnesia, and the presence of copper.

So far as known, ores of the Cornwall type do not occur outside of Pennsylvania, though certain small veins of magnetite found in Nova Scotia may be more or less closely related to them. In Pennsylvania similar ores have been mined on a considerable scale at five localities in Berks County, at Warwick in Chester County, and in the vicinity of Dillsburg in York County; but only the deposits at Cornwall are now worked in a large way.

The deposits have been described by several geologists; but in the belief that an investigation of a somewhat broader scope than any of those previously attempted might lead to an understanding of the manner in which the ores were formed, and that a knowledge of their genesis might warrant practical suggestions looking to the discovery of ore bodies yet unknown, a systematic study of the deposits was undertaken by Arthur C. Spencer of the United States Geological Survey, and was carried on during the autumn of 1906 and the summer of 1907. Mr. Spencer's report on this work has just been published by the Survey as Bulletin 369.

Although the observed facts failed to establish a complete theory regarding the origin of the ores, it is believed that the following suggestions, made by Mr. Spencer, will be of value to those who in the future may make practical explorations for new ore bodies in the field:

1. Ore bodies are to be sought only on or near the walls of masses of diabase.

2. Large masses of diabase are more favorable for ore deposits than smaller ones.

3. Crosscutting intrusions and highly inclined sills are more favorable than sills of low inclination.

4. Limestones and limy shales are far more likely to be replaced by ore than clay shales or sandstones.

5. Particularly favorable locations for ore are found in masses of limestone that lie between bodies of diabase and beds that are in a marked degree less susceptible than limestones to the metamorphosing influence of igneous rocks.

6. The most promising situations will be found at places where the largest number of the above stated favorable conditions occur in combination.

Mr. Spencer's report is illustrated by maps and sections and his geologic descriptions of the deposits have been prepared with special reference to the possibility of indicating situations in which it may prove worth while to look for deposits of iron ore as yet unrecognized.

About 200 were present at the annual meeting and banquet of the Employers' Association of Cleveland at the Hollenden Hotel, February 18. The question of establishing a permanent legal department for the association was taken up and referred to a committee. A publicity department was also recommended in the report of the officers. The association will consider the advisability of opening a free labor bureau.

The American Bolt Works, located at East Birmingham and owned by Wm. H. and Charles H. Merritt of Birmingham, Ala., has been purchased by Charles J. and H. C. Graham of the Graham Nut Company, Pittsburgh, Pa. This plant is in operation and employs 200 men.

Trade Publications.

Electrical Equipment.—General Electric Company, Schenectady, N. Y. Bulletins and publications. Bulletin No. 4638, superseding No. 4482, is a guide to the design of a medium and small capacity central station switchboard, outlined with the aid of diagrams and descriptive matter illustrating the best method of laying out that part of a power plant. Bulletin No. 4642 describes briefly a roller bearing trolley base which is constructed of malleable iron and which, exclusive of the pole, weighs 115 lb. Attention is called to the advantage in lightness, and it is claimed that the base is especially strong. Publication No. 3728 gives, by means of tables and curves, brief expositions of the value of the Tungsten series street lamps, and publication No. 3750 shows the company's type H transformer.

Chucks.—Cushman Chuck Company, Hartford, Conn. Booklet. Lists various types of chucks made by the company, including its standard lines and special chucks, such as attachments for front and back ends of cutting-off machines. Drill chuck arbors in a number of styles are shown, and directions for fitting lathe chucks and for ordering repairs are given.

Well Drilling Machinery.—Oil Well Supply Company, Pittsburgh, Pa., and 26 Cortlandt street, New York. In *The Iron Age*, February 11, catalogue section A, No. 21, 6 x 9 in., issued by the above company, was, as a result of a typographical error, described as containing 38 pages instead of 368 pages.

Copper and Brass Rolling Mills.—C. G. Hussey & Co., Pittsburgh, Pa. Hanger. An excellent paper imitation of an embossed bronze sheet advertising the company's product.

Wire Rope.—A. Leschen & Sons Rope Company, St. Louis, Mo. Two circulars. One illustrates the new St. Louis Cathedral, in the construction of which the company's wire rope was used. A short description of the cathedral is given. The other circular shows an aerial rope tramway for use in transporting ore, coal, timber, &c. This tramway is recommended because it can be erected at a low cost and can be used to good advantage in conveying material across mountains and over marshy land where wagon loads are impracticable.

Water Regulators.—The Senters Mfg. Company, Chattanooga, Tenn. Three circulars. Treat respectively of the Senter pump governor, the Senter feed water control, and the Senter high and low water alarm.

Electric Coal Puncher.—The Pneumelectric Machine Company, Syracuse, N. Y. Two booklets. One is a reprint of an article from *Mines and Minerals*, written by T. W. Sprague and describing the construction and method of operating the Pneumelectric coal cutting machine. The other booklet shows the machine, which is a self-contained apparatus using as the driving means electricity and compressed air combined, and shows the machine in operation. The various parts of the apparatus are described and illustrations include views of the equipment unassembled.

Industrial Instruments.—The Industrial Instrument Company, Foxboro, Mass. The first of a series of circulars for a loose leaf binder. Describe products sold by the company, including gauges, revolution counters, valves, time clocks and electric tower clocks. The first circular describes the company's plant and briefly outlines the scope of the Industrial Instrument Company, which is the sales company for the Standard Gauge Mfg. Company and the Standard Electric Time Company.

Steel and Galvanized Sheets.—Newport Rolling Mill Company, Newport, Ky. Booklet. This catalogues briefly the company's line of sheeting, which includes corrugated sheets for roofing, weatherboard siding, arches, ridge rolls, &c., for general construction work.

Welding Repairs.—Goldschmidt Thermit Company, 90 West street, New York. Booklet. Examples of work done with thermit are shown, including some particularly heavy pieces, such as ship anchors, rudder posts, car trucks, flywheels, shafts, &c. The company undertakes contracts for rail welding, pipe welding, &c.

Coal Crushers.—Pennsylvania Crusher Company, Philadelphia, Pa. Bulletin No. 512. Illustrates the company's all steel frame swing hammer crusher. The machine is shown from several directions, and a photograph of a shipment of six large crushers to the United States Steel Corporation is reproduced.

Oil Switches and Circuit Breakers.—Kelman Electric & Mfg. Company, 612 North Main street, Los Angeles, Cal. John Kelman, Eastern representative, 194 Lefferts place, Brooklyn, N. Y. Bulletin, circulars and reprints. Bulletin No. 4 describes high voltage oil switches and oil circuit breakers which are electrically operated. These circuit breakers operate without the use of series transformers and are made in several styles, including circuit breakers with electrically operated automatic overload release, non-automatic electrically operated switches, compressed air circuit breakers and others for special purposes. Folder No. 2 describes briefly high voltage switches and circuit breakers, and folder No. 3 illustrates the company's apparatus in the Edison Electric Company's plant at Fernando, Cal. Two other circulars are reprints from the *Electrical World*, April 4, 1908, and January 2, 1909, the first describing the Fernando, Cal., installation and the second the standard electrically operated oil switches made by the company.

Vanadium Die Steel.—American Vanadium Company, Frick Building, Pittsburgh. Leaflet. Gives remarkable results of tests of pneumatic riveting hammer vanadium die steel made at the works of the New York Shipbuilding Company, Camden, N. J., September, 1907, to May, 1908.

Gas Producers and Producer Gas Power Plants.—R. D. Wood & Co., Philadelphia, Pa. Catalogue, 6 x 9½ in., 160 pages. In addition to being a well compiled catalogue of some of this firm's products, the book contains a treatise on the advantages of gaseous fuel and the manner in which it can be applied to various purposes. Comparisons are made with the aid of tables of the cost of gas as a fuel as against steam. The design and construction of the company's standard gas producer are explained with the aid of sectional illustrations, diagrams, &c. A number of installations of producer plants are shown, and ground plans of typical plants are included. Useful data relating to power production are given. A unique feature of the book is the supplementary pages preceding the introduction and following the table of contents in the rear of the book, which contain illustrations of triple expansion pumping engines, gate valves, centrifugal pumps, hydraulic shears, presses, &c.

Wire Flattening Mills.—August Schmitz, Duesseldorf, Germany. Pamphlet. Describes and illustrates with the aid of photographic reproductions a heavy wire flattening mill which is built in two sizes, one with rolls 8 in. in diameter and 5 in. face, and the second with rolls 10 in. in diameter and 6 in. face. The rolls are arranged for internal water cooling and run in bronze bearings lined with antifriction metal. The roll housings are cast steel to absorb vibration and generally are adjusted by a central geared adjustment instead of independent wrench adjustments. The first size will handle wire up to ½-in. in diameter and the second size takes wire up to ⅝-in. in diameter. The machines can be arranged for rolling profile wires of any variety.

Vertical Boring Mills.—Gisholt Machine Company, Madison, Wis. Page for loose leaf binder. Shows an 88-in. vertical boring mill, the general design of which follows the company's standard boring mills above 42 in. in size. The mill has an extreme swing of 89 in. and clears 69½ in. under the cross rail. A friction headstock is added through which three changes of sliding gears and six changes of speed may be obtained mechanically, giving in connection with a two-speed countershaft a total of 12 table speeds, ranging from 0.9 to 30 rev. per min. in geometrical progression.

Horticultural Spraying Apparatus.—Jacobson Machine Mfg. Company, Warren, Pa. Bulletin L. Describes gasoline engine driven apparatus for spraying trees and plants. The engines are portable and made in sizes up to 5 hp. Several types of pumps which can be used in connection with them are shown and some space is given to spraying apparatus made by other companies to which the engines can be attached. Gasoline engines are also illustrated and instructions for spraying are given with formulas for fungicides and insecticides.

Rock Crushers.—T. L. Smith Company, Majestic Building, Milwaukee, Wis. Two catalogues, 6 x 9 in., 33 pages, and 6 x 9 in., 8 pages. A short description details the development of the gyratory type of rock crusher and a general description of the company's standard crusher is given, accompanied by a cross sectional view and an illustration of a complete machine. Around the stationary shaft of the machine rotates an eccentric sleeve which is gear driven in the lower end and which imparts to a hollow crushing head surrounding it a gyratory crushing movement. Some portable crushers are shown and brief mention is made of chain elevators and revolving screens, in addition to a portable jaw crusher which is made for use where great capacity is not essential. The second catalogue shows the standard jaw crushers and explains them in detail.

Machine Tools.—Garvin Machine Tool Company, Spring and Varick streets, New York. Catalogue, edition D, 6 x 9 in., 96 pages. Devoted especially to milling machines, profiling machines, tapping machines, drill lathes, gang drills, cutters and grinders, &c. Standard sizes are shown and short descriptions are given of machines that can be made to order. The volume is made for foreign distribution, and German and French text is included, together with instructions for ordering by cable or telegraph and codes for this purpose.

Open Hearth Steel Products.—Inland Steel Company, Chicago, Ill. Catalogue, 5 x 7½ in., 158 pages, bound in leather. An illustration of the Indiana Harbor works of this company forms a frontispiece for this neatly arranged volume, and the rest of the book is given over to tables of sizes of structural material, billets, blooms, slabs, bars, &c., turned out by the company, with some illustrations in color showing dimensions of the company's products. Corrugated sheets for siding and roofing are also shown and tables of weights and standard gauges are included.

Sight Feed Oil Pumps.—Sight Feed Oil Pump Company, Milwaukee, Wis. Bulletin No. 209. A reissue of an older bulletin devoted to the Richardson automatic sight feed oil pump with some additional descriptive matter. Line drawings show the various sections of the pump.

The Use of Our Iron Ore Resources.

In an address before the Franklin Institute John Birkinbine of Philadelphia recently discussed "Our National Resources, Their Conservation and Utilization." He emphasized the point that the conservation of resources is not merely holding them in reserve for the future, but judicious, practical utilization. He added that the theorist is not to be thanked for the growing interest in this subject, since thousands of active brains have been at work on our economic problems, adding to the material wealth of the country and the comfort of the people, by reducing the consumption of resources, lowering costs of production or converting waste into valuable materials. Reference was made to President Roosevelt's statement at the Washington conference that the nation's increase in the consumption of coal in 1907 over that of 1906 exceeded the total consumption of the year 1876. In comment Mr. Birkinbine said: "Had President Roosevelt added to his remarks concerning coal that, had we used fuel as wastefully in 1906 and 1907 as in 1876, the yearly annual increase for consumption would be more than double the production for 1876, the real advance of the country would have commanded attention without weakening the plea for conservation." Concerning iron ore the speaker said:

A successful ironmaster, basing conclusions upon a consumption of 1200 lb. of iron ore per inhabitant in 1907, prophesied that in 30 years one-half of our supply of original iron ore will be exhausted, and that in a generation we must depend upon the leaner ores. If these lean ores should be our reliance, which is not admitted, they will average about the same proportion of iron as the mineral fed to blast furnaces when Mr. Carnegie entered the iron business, from which he retired with a great fortune. He has seen the development of the Lake Superior iron ore region and its rapid growth, until 80 per cent. of domestic ores used come from this district and have displaced local ores, many of which lie dormant. He has seen the upbuilding of a magnificent iron and steel industry, resulting from the abundance and excellence of these ores, the district reaching the phenomenal output of 42,000,000 tons in 1907, with individual mines contributing 1,500,000 to 2,000,000 tons each. But the output of 1907 may not be again reached for years. The curve of annual production of iron and steel, which in the last decade was approaching the vertical, may flatten, and we may give weight, such as they evidently deserve, to other domestic iron ore resources.

Other Than Lake Ores Coming Forward.

That leaner ores will be used no one doubts; in fact, ores are now shipped from the Lake Superior region which for years were considered undesirable; but with improved mining, transportation and smelting methods, the actual cost of producing steel is not advanced, and it is probable that some leaner or less desirable ores could now be used advantageously and economically in place of ore brought from the Lake Superior region. While the draft upon the mines has been tremendous, apparently threatening exhaustion, new finds are constantly reported. Minnesota, the largest producer, has developed ore bodies beyond the Mississippi River, and in the older districts of the Lake Superior region new discoveries are not unusual.

The Lake Superior region is the most productive, but not the only source of domestic ore supply. The Southern States have reserves which will permit them to continue producing iron and steel in competition. Late developments in concentration in northern New York demonstrate that a liberal supply of rich ore may be depended upon, and that State, as well as New Jersey and Pennsylvania, offers possibilities in iron ores, which, although requiring beneficiation, may be mined, treated and smelted at expenditures that will make them competitors with Lake Superior ores.

As far as iron ore is concerned, the western portion of the continental United States has been but imperfectly explored, but in Wyoming, Colorado and New Mexico exploited deposits maintain an iron and steel industry approximating in capacity the product of Sweden, and show large reserves of available mineral.

Improved Utilization of Iron Ores.

The abundance of our minerals, the comparatively low cost at which they can be obtained and transported, and the high rate of labor which has prevailed in this country, have retarded the introduction of many economies, but in the iron industry wasteful methods have been modified, ores formerly refused are utilized, advances in metallurgy reduce the fuel and labor cost per ton of metal produced, and an effort to conserve resources is growing in appreciation.

For the past 10 years the average annual increase in pig iron production has nearly equaled the production of the metal with mineral fuel in 1876, and as in the 30 years under consideration the railroad mileage of the country quadrupled, while the average business carried on per mile of road is greatly in excess of earlier years, the demands for iron and steel correspondingly augmented. If progress in other lines of industry is traced similar results may be expected, and it is therefore not surprising to find that the statement made by the President could be amended, and that in late years we are annually augmenting the production, not only of coal, but of other materials, at a rate greater than the entire country demanded in 1876.

With an advancing civilization, progressive industries, augmented wealth and increased population, greater demands upon our mineral resources are to be expected. These are evidences of national development, and the problem presented to the people is not the use, but the abuse of the available resources. If the consumption of coal required per ton of freight or per passenger hauled per mile on the railroads, or if the amount necessary to make a ton of pig iron or steel products, or to produce 100 hp. by prime movers, had been the same in 1907 as it was in 1876, the increase shown in that year over the previous one would be much greater than the total output in 1876.

In the absence of the advances in metallurgy and improvement in mechanical appliances, progress in iron and steel manufacture, in other industries and in transportation details would have been impossible. The country could not prosper as it does to-day if prices of manufactured articles or costs of transportation were on the basis of 30 years ago.

The White-Souther Endurance Testing Machine.—The Henry Souther Engineering Company, Hartford, Conn., has developed the White-Souther endurance testing machine for making dynamic tests of materials. It subjects a specimen to alternating stresses by revolving it with the center supported and the ends loaded. The results for the two ends afford checks on one another. The machine is equipped with ball bearings, and runs at high speed without heating, thus eliminating the trouble which arises from friction due to high speed and heavy loading. The customary speed of the machines now in use is 1300 rev. per min. An objection to some of the old forms of endurance testing machines is that the specimen is too difficult to prepare, but this difficulty is claimed to have been overcome in the White-Souther standard test specimen. The machines are furnished complete with weights and revolution counters, and a 1-hp. motor is sufficient to operate them. Tinius Olsen & Co., 500 North Twelfth street, Philadelphia, Pa., are the sole selling agents.

Following the lead of the Republic Iron & Steel Company, other leading steel interests are reported to be organizing concrete engineering departments to supervise the manufacture and give counsel concerning the use of cold twisted bars for reinforcing purposes. The United States Steel Corporation is not understood to be interested in this move, as the American Steel & Wire Company has heretofore made provision for standardizing and placing upon a reliable basis its methods of manufacturing this material and co-operating with contractors in its use.

NEWS OF THE WORKS.

General Machinery.

Arthur E. Olmstead, owner of the Ontario Iron Works, Pulaski, N. Y., has purchased the plant of the Mexico Machine Company, Mexico, N. Y., of which Luther J. Clark was proprietor. Mr. Clark retires from business on account of impaired health. The machinery will all be taken down by Mr. Olmstead and moved to Pulaski, where he will establish a machine shop in connection with his present foundry business.

The United Machine Company, Detroit, Mich., contemplates enlarging its plant to meet the increased demand for its products. While no definite location has been selected for the new building, the company is considering moving its plant to either the outskirts of the city or to some other locality.

The Frontier Iron Works, Buffalo, N. Y., has purchased a large site at Letchworth and Grant streets, having New York Central track connections, and will build and equip an extensive new plant, consisting of foundry, machine shop, pattern shop and office building, instead of erecting a machine shop addition to its present plant, as recently reported.

B. F. Donovan, Clifton Forge Grocery Company, Inc., Clifton Forge, Va., intends to erect a small ice plant and bottling works in eastern Virginia, and is in the market for suitable machinery for these two plants.

Power Plant Equipment.

Recent orders of the Crocker-Wheeler Company of Ampere, N. J., include 250-kw. motor generator set for the Tennessee Coal, Iron & Railroad Company at Ensley, Ala., consisting of a 250-kw. direct current generator, driven by a 6600-volt three-phase 25-cycle synchronous motor, to be used as an exciter; 50 hp. of small elevator motors, Haughton Elevator & Machine Company, Toledo, Ohio, and a number of 2/5-hp. motors, Yawman & Erbe, Rochester, N. Y.

The City Secretary of Shattuck, Okla., will receive bids until March 8 for materials for the construction of a system of water works which will include two return tubular boilers, one feed water heater, two boiler feed pumps, one air compressor, two duplex pumps, cast iron pipe, valves, &c.

The City Treasurer of Montgomery, Ala., will receive bids until March 15 for two 200-hp. water tube boilers and two 250-hp. water tube boilers for the city pumping station.

The Board of Aldermen, Batavia, N. Y., has under consideration the purchase of an additional generating set of about 75 kw. capacity, to be installed at the municipal lighting plant. Specifications will be prepared and bids called for in the spring.

The City Council of Asbury Park, N. J., will receive bids until March 1 for the construction of sewerage disposal works, including the equipment of the pumping station with three centrifugal pumps, four electric motors, conveyors, screens, piping, &c.

The Board of Fire and Water Commissioners of Kansas City, Mo., will receive bids until March 11 for a 15,000,000-gal. vertical triple-expansion crank and flywheel pumping engine for the Turkey Creek pumping station.

The Twin City General Electric Company, Ironwood, Mich., intends to place contracts for material for the construction of a 7-mile extension to Bessemer. The company is making repairs to its transmission lines and installing new machinery in its plant, and within the next 10 days will place contract for a 150-kw. generator, 200-hp. alternating current motor, connected to direct current generator. H. F. Pearce is superintendent.

Foundries.

The contract for the equipment of the Powers Foundry Company's plant at Elkton, Md., for the manufacture of steel castings has been taken by Selden S. Deemer, New Castle, Del. The Paxson-Deemer side blow converter will be installed and will be ready for operation in three months.

The Deemer Steel Casting Company, New Castle, Del., now has a force of men at work converting to its use the old Triton plant in that city, and the improvements will be completed in about six months. The Paxson-Deemer converter will be installed. The directors of the company are the following: S. S. Deemer, president and general manager; Edward T. Price, Wilmington, Del.; A. P. Witteman, W. C. Parsons and T. E. Austin, Philadelphia, and J. V. R. Hunter, Reading, Pa.

The recent fire at the plant of the Cahill Iron Works, Chattanooga, Tenn., was confined to the foundry and did but little damage. The company expects to have its foundry in operation in about two weeks. The other departments were in operation three days after the fire.

The Reading Iron Company, Reading, Pa., has taken out a permit for the erection of its new pipe mill, which will be 273 x 400 ft., of steel and brick construction.

The Berry Foundry & Mfg. Company, St. Joseph, Mo., has installed an extensive overhead track system in its plant with electrically operated trolley and hoist made by the Northern Engineering Works, Detroit, Mich. The track is equipped with switches and curves for facilitating handling of material in the plant.

The Donaldson Iron Company, Emaus, Pa., expects to place its new pipe foundry in operation this summer. This foundry, which was built last year and which has not yet been placed in operation, is 100 x 200 ft. and is equipped for making 24, 30 and 36 in. cast iron pipe.

The Plattsburgh Foundry & Machine Company, Plattsburgh, N. Y., is starting construction on a foundry, pattern shop and pattern house addition to its plant, the foundry addition to be one story, 30 x 80 ft., and built of concrete blocks. The pattern storage building is to be two stories and of frame construction, while the pattern shop will be erected as an addition on the north side of the present machine shop building. It is hoped to have the additions completed by May 15.

Fires.

The Utica Aluminum & Novelty Works, Utica, N. Y., was damaged by fire last week, the estimated loss on machinery and stock being placed at $10,000. The building was extensively damaged, but was occupied under lease.

The National Novelty Company's foundry and hardware plant at Wrightsville, Pa., was damaged $40,000 by fire February 19.

The car shops of the Portland Railway, Light & Power Company, Portland, Ore., were damaged $25,000 by fire February 9.

The oil mill and ginnery of the Southern Cotton Oil Company, at Arlington, Ga., were burned February 16, the loss being about $30,000.

Hardware.

The Hayes Pump & Planter Company, Galva, Ill., is experiencing the largest trade in its history. The plant has been working to its fullest capacity all season and a night force was recently added to enable the company to fill orders promptly. The foundry is running overtime and a large amount of this work is being made outside. Extensive additions to the plant are planned to care for the increasing trade in corn planters, pumps and kindred lines.

Miscellaneous.

The Locke Regulator Company, Salem, Mass., through its Pittsburgh representative, Walter O. Giles, 621 Park Building, has made engine stop installations in plants of the Carnegie Steel Company, National Tube Company, Jones & Laughlin Steel Company, Allegheny Steel Company, Lackawanna Steel Company, Republic Iron & Steel Company, Youngstown Iron & Steel Roofing Company, Niles Iron & Steel Company, Youngstown Sheet & Tube Company, Pittsburgh Steel Company and United Engineering & Foundry Company.

Blake & Williams, New York, manufacturers of steam and water heating and ventilating apparatus, are to erect a six-story brick factory, 25 x 85 ft., at 24 Barrow street. Into this building will be moved the equipment of the present building and the firm will not require much new machinery.

W. H. Penman, Beaumont, Texas, has purchased 2 acres of ground on which he is constructing a plant for the manufacture of plate and sheet iron work. The machinery purchased from the Penman Steel & Iron Works will be installed in the new building.

The structural and architectural iron works business of A. Gordon & Brothers, Brooklyn, N. Y., has been incorporated as the Gordon Brothers Iron Works.

The American Specialty Company, Monadnock Building, Chicago, has closed a contract with the High Speed Drill Company, Dubuque, Iowa, to take the entire output of the drill company, and become the exclusive sales agent for its complete line of flat and flat twisted high-speed drills. This line comprises machine shop, structural, blacksmith, ratchet, track drills, &c. These drills are radically different from the majority of high-speed flat and flat twisted drills now in use, as they have the common standard taper shank, and will, therefore, fit any standard drill press, air drill, electric drill, ratchet, &c., without the use of special chucks of any kind. The entire line is also made with the common straight shank.

An investigation has been made by the laboratories of the Royal Institute of Public Health in Great Britain of the cause of the death in December of five Russian emigrants in a voyage of 24 hr. from Antwerp to Grimsby, England, on a vessel which carried a cargo of ferrosilicon. It was found by repeated experiments, in which live animals were used, that ferrosilicon on being moistened gives off gases causing death in a short time. The finding of the investigators is that although arseniuretted hydrogen is produced in small quantities by the union of moisture with ferrosilicon, the chief gas given off is phosphoretted hydrogen, which is so poisonous that 0.02 per cent. of it in air is fatal to small animals within half an hour.

The Iron and Metal Trades

The complete reversal of the selling policy of the Steel Corporation has thrown the entire trade into confusion, and buyers and sellers have been groping in the dark. Each interest is endeavoring to find its bearings and is seeking to determine what prices must be met and whether it is wise to take a part in the struggle. Small mills are even now withdrawing completely.

Each constituent company of the Steel Corporation appears to adopt such course as the special circumstances surrounding it justify.

As yet there are no facts upon which to base any opinion concerning the effect of the price reductions in stimulating business. There have been no sales of consequence, and what inquiries are being received are either put out as feelers or as a means of securing data for claims for readjustments on recent contracts. A preliminary step in a number of instances has been the demand for cancellation of such contracts.

It may be well to warn the trade that it may take some weeks before the skirmishing among buyers and sellers is over and round tonnages are placed. It is tonnage that is wanted by the mills, and the prices will be made to bring it out.

There are some indications of a friendly spirit among some of the leading interests, so that the term "price war" should not be indiscriminately used.

It is only in a few lines of mill products that prices have been openly made, and some of the published reports regarding other lines are undoubtedly exaggerated.

The leading Pipe mills have issued new discounts on Merchant Pipe of 80 off on ¾ to 6 in., with the usual one point on the base and 5 per cent. differential to leading jobbers. The new discounts show reductions ranging from $6 to $10 per ton.

There is little disposition to force the selling of Billets, but it is probable that the price will be made $22, Pittsburgh, with $23 for Tin Bars.

There is no truth in the reports that the price of Steel Rails has been reduced from $28 to $25. The opinion is expressed, however, that they may be affected by the struggle.

Steel Bars are definitely and openly down to 1.20c., Pittsburgh, although it must be noted that some leading sellers decline to commit themselves beyond July 1. It may be observed in this connection that there is a disposition on the part of some important mills in all lines to decline to be drawn into long time contracts at the present level of prices and to touch in any way the long established lists of extras.

So far as we can learn, no prices lower than 1.30c., Pittsburgh, have yet been named by anybody on Structural Material and on Plates. The reports that 1.25c. is being done cannot be confirmed.

Hoops and Bands have been reduced $4 per ton. While it is admitted that some sharp concessions have been made on Sheets, no exact figures are available. Nor has there developed anything tangible in the matter of prices on Tin Plate.

Wire makers are maintaining prices for the present, the feeling being that the condition of the trade is such that developments concerning the spring movement must be awaited before intelligent action can be taken.

One point in connection with the developments of the past week which cannot be too strongly insisted upon is that the decline in prices of finished Iron and Steel has discounted any possible effect of a reduction in the tariff duties on Iron and Steel upon the domestic markets. In fact, the country would be safe even at the special export prices made abroad under stress of universal dullness in the European producing countries, if the rates were nearly cut in two. Under such a remote contingency Steel Bars, which are now selling at 90 marks per metric ton, f.o.b. German mill, could be landed at 1.35c. per pound, at the cut duty. Foreign Plates, selling at 100 marks per ton, might be sold at 1.50c. per pound.

A sharp distinction must be drawn between those finished lines in which co-operation has had its sway and the crude material, Pig Iron, in which there has been an open market all along. Only a part of the metal made is bought and sold. In January the Steel makers produced for their own use 1,118,000 tons, leaving 683,000 tons only to the merchant furnaces, who therefore represented a little over 26 per cent. of the output. A moderate proportion of this is Bessemer, Basic, Low Phosphorus and Mill Iron, which is directly affected by the recent events in the Steel market. Since it is almost entirely consumed by the small independent Steel works and puddling mills it would suffer, if these were beaten in the struggle for work by the large companies who make their own Iron. The bulk, however, is Foundry Iron, which could only be stimulated by the inevitable increase in general consumption if it were not for one important consideration and that is one which soon will loom up. We refer to the prices for Lake Ores for the coming season. The sellers of Lake Ores are few in number and are powerful, though not united, and it remains to be seen whether and to what extent they will back up their Steel producing customers directly or indirectly by a readjustment of prices. Some of them are makers of Pig Iron and can meet the market without making any concession to outside Ore buyers. But there would probably develop from any concessions made on Ore prices to outside Steel merchant furnaces a general lowering of prices on Ore, and it is this contingency which might lead to a weakness in Foundry Iron after the season's Ore prices had been fixed.

Coke is already so low that there is little chance that Pig Iron makers could pass on to their customers economies in production thus effected.

During the past week Pig Iron has been very dull in all markets, and is weaker.

One of the most significant developments during the past week is the announcement from Chicago that that city will hereafter be a basing point in naming prices on such products as are turned out by the mills of the

United States Steel Corporation in that district. This will be established without reference to the freight rate from Pittsburgh as an arbitrary differential. Some sort of differential will be observed, but just what it will amount to has not yet been fully determined. A similar step is contemplated by producers at Buffalo.

The Copper market is very dull, and it is probable that Electrolytic may be purchased at 12½c., which should begin to attract buyers.

A Comparison of Prices.

Advances Over the Previous Month in Heavy Type, Declines in Italics.

At date, one week, one month and one year previous.

	Feb.24, 1909.	Feb.17, 1909.	Jan.27, 1909.	Feb.26, 1908.
PIG IRON, Per Gross Ton:				
Foundry No. 2, Standard, Philadelphia	*$16.75*	$17.00	$17.25	$18.25
Foundry No. 2, Southern, Cincinnati	*15.75*	16.25	16.25	15.75
Foundry No. 2, Local, Chicago	*16.50*	16.50*	17.35*	17.85*
Basic, delivered Eastern Pa.	*16.00*	16.75	16.75	17.25
Basic, Valley Furnace	*15.00*	15.00	15.50	15.90
Bessemer, Pittsburgh	*16.40*	16.90	17.15	17.90
Gray Forge, Pittsburgh	*14.90*	15.15	15.40	15.90
Lake Superior Charcoal, Chicago	19.50	19.50	19.50	21.50
BILLETS, &c., Per Gross Ton:				
Steel Billets, Pittsburgh	....	25.00	25.00	28.00
Forging Billets, Pittsburgh	....	27.00	27.00	30.00
Open Hearth Billets, Phila.	*25.00*	26.20	26.20	30.40
Wire Rods, Pittsburgh	33.00	33.00	33.00	35.00
Steel Rails, Heavy, at mill	28.00	28.00	28.00	28.00
OLD MATERIAL, Per Gross Ton:				
Steel Rails, Melting, Chicago	14.50	14.50	14.50	13.00
Steel Rails, Melting, Phila.	....	15.50	16.50	14.50
Iron Rails, Chicago	*18.25*	18.25	18.50	17.00
Iron Rails, Philadelphia	....	19.00	19.50	18.00
Car Wheels, Chicago	*15.25*	15.25	15.50	15.75
Car Wheels, Philadelphia	....	15.50	16.00	16.00
Heavy Steel Scrap, Pittsburgh	*15.50*	15.50	16.50	13.75
Heavy Steel Scrap, Chicago	*13.50*	13.50	13.75	12.50
Heavy Steel Scrap, Phila.	....	15.50	16.50	14.50
FINISHED IRON AND STEEL, Per Pound:	Cents.	Cents.	Cents.	Cents.
Refined Iron Bars, Philadelphia.	*1.45*	1.47	1.55	1.65
Common Iron Bars, Chicago	*1.40*	1.50	1.50	1.65
Common Iron Bars, Pittsburgh.	...	1.50	1.50	1.50
Steel Bars, Tidewater, New York	*1.36*	1.56	1.56	1.76
Steel Bars, Pittsburgh	*1.20*	1.40	1.40	1.60
Tank Plates, Tidewater, New York	*1.46*	1.76	1.76	1.86
Tank Plates, Pittsburgh	*1.30*	1.60	1.60	1.70
Beams, Tidewater, New York	*1.46*	1.76	1.76	1.86
Beams, Pittsburgh	*1.30*	1.60	1.60	1.70
Angles, Tidewater, New York	*1.46*	1.76	1.76	1.86
Angles, Pittsburgh	*1.30*	1.60	1.60	1.70
Skelp, Grooved Steel, Pittsburgh	...	1.45	1.45	1.70
Skelp, Sheared Steel, Pittsburgh.	...	1.50	1.50	1.80
SHEETS, NAILS AND WIRE, Per Pound:	Cents.	Cents.	Cents.	Cents.
Sheets, Black, No. 28, Pittsburgh.	...	2.50	2.50	2.50
Wire Nails, Pittsburgh	1.95	1.95	1.95	2.05
Cut Nails, Pittsburgh	1.75	1.75	1.75	2.00
Barb Wire, Galv., Pittsburgh	2.40	2.40	2.40	2.50
METALS, Per Pound:	Cents.	Cents.	Cents.	Cents.
Lake Copper, New York	*13.00*	13.50	14.25	12.62½
Electrolytic Copper, New York.	*12.75*	13.12½	13.75	12.50
Spelter, New York	*4.90*	4.92½	5.10	4.75
Spelter, St. Louis	*4.80*	4.80	4.95	4.75
Lead, New York	*4.00*	4.05	4.17½	3.75
Lead, St. Louis	*3.90*	3.90	4.02½	3.65
Tin, New York	*28.62½*	28.80	27.75	28.70
Antimony, Hallett, New York	*7.75*	8.00	8.00	9.00
Nickel, New York	45.00	45.00	45.00	45.00
Tin Plate, 100 lb., New York	....	$3.89	$3.89	$3.89

* These quotations have been changed from prices at furnace to delivered prices at foundries. The 35c. is for switching charges.

Prices of Finished Iron and Steel, F.O.B. Pittsburgh.

Freight rate from Pittsburgh in carloads, per 100 lb.: New York, 16c.; Philadelphia, 15c.; Boston, 18c.; Buffalo, 11c.; Cleveland, 10c.; Cincinnati, 15c.; Chicago, 18c.; St. Paul, 32c.; St. Louis, 22½c.; New Orleans, 30c.; Birmingham, Ala., 45c. Rates to the Pacific Coast are 80c. on Plates, Structural Steel, and Sheets, No. 11 and heavier; 85c. on Sheets, Nos. 12 to 16; 95c. on Sheets, No. 16 and lighter; 65c. on Wrought Pipe and Boiler Tubes.

Structural Shapes.—I-Beams and Channels, 3 to 15 in., inclusive, 1.30c., net; I-Beams over 15 in., 1.40c., net; H-Beams over 8 in., 1.50c.; Angles, 3 to 6 in., inclusive, ¼ in. and up, 1.30c., net; Angles, over 6 in., 1.40c., net; Angles, 3 x 3 in. and up, less than ¼ in., 1.50c., base, half extras, Steel Bar card; Tees, 3 in. and up, 1.30c., net; Zees, 3 in. and up, 1.30c., net; Angles, Channels and Tees, under 3 in., 1.20c., base, half extras, Steel Bar card; Deck Beams and Bulb Angles, 1.60c., net; Hand Rail Tees, 2.70c., net; Checkered and Corrugated Plates, 2.70c., net.

Plates.—Tank Plates, ¾ in. thick, 6¼ in. up to 100 in. wide, 1.30c., base, at mill, Pittsburgh. Extras over this price are as follows:

Tank, Ship and Bridge quality, ¼-in. thick on edges, 100 in. wide, down to but not including 6 in. wide, is taken as base.

Steel Plates up to 72 in. wide, inclusive, ordered 10.2 lb. per square foot, shall be considered ¼-in. Plate. Steel Plates over 72 in. wide must be ordered ¼-in. thick on edge, or not less than 11 lb. per square foot, to take base price. Steel Plates over 72 in. wide ordered less than 11 lb. per square foot down to the weight of 3-16-in. shall take the place of 3-16-in.

Percentages as to overweight on Plates, whether ordered to gauge or weight, to be governed by the Association of American Steel Manufacturers' Standard Specifications.

Gauges under ¼-in. to and including 3-16-in. Plates on thin edges	$0.10
Gauges under 3-16-in. to and including No. 8	.15
Gauges under No. 8 to and including No. 9	.25
All sketches (excepting straight taper Plates varying not more than 4 in. in width at ends, narrowest end being not less than 30 in.)	.10
Complete Circles	.20
Boiler and Flange Steel Plates	.10
"A. B. M. A." and ordinary Firebox Steel Plates	.20
Still Bottom Steel	.30
Marine Steel	.40
Locomotive Firebox Steel	.50
Shell grade of Steel is abandoned.	
For widths over 100 in. up to 110 in	.05
For widths over 110 in. up to 115 in	.10
For widths over 115 in. up to 120 in	.15
For widths over 120 in. up to 125 in	.25
For widths over 125 in. up to 130 in	.50
For widths over 130 in	1.00

TERMS.—Net cash 30 days. Pacific Coast base, 1.50c., f.o.b. Pittsburgh.

Wrought Pipe.—Discounts on Steel Pipe, ¾ to 6 in., to the large trade, are 75 and 5 per cent. off list, while a few of the very largest jobbers, that have mill connections, are given 76 and 5 per cent. off list. Regular discounts to jobbers, carloads, are as follows:

	Steel merchant pipe. Black.	Steel merchant pipe. Galv.	Genuine iron pipe. Black.	Genuine iron pipe. Galv.
	%	%	%	%
⅛ to ¼ in.	72	56	67	51
⅜ in.	73	59	68	54
½ in.	76	64	71	59
¾ to 6 in.	80	70	75	65
7 to 12 in.*	75	60	70	55
Extra strong, plain ends:				
⅛ to ⅜ in.	60	48	60	48
½ to 4 in.	67	55	67	55
4½ to 8 in.	63	51	63	51
Double extra strong, plain ends:				
½ to 8 in.	61	50	54	43

* Iron prices are for 7 to 8 in.

Boiler Tubes.—Regular discounts are as follows:

Boiler Tubes.

	Steel.
1 to 1½ in.	50
1¾ to 2¼ in.	62
2½ in.	64
2¾ to 5 in.	70
6 to 13 in.	62
2½ in. and smaller, over 18 ft. long, 10 per cent. net extra.	
2¾ in. and larger, over 22 ft. long, 10 per cent. net extra.	

Wire Rods.—Bessemer Rods, $33; Chain Rods, $33; Basic Rods, $34.

W. d'Arcy Ryan and G. H. Stickney, electrical engineers attached to the General Electric Company, Lynn, Mass., have been at Niagara Falls, N. Y., the past week gathering data on which they will prepare plans for the illumination of the falls. It is stated that the proposition includes the placing of the most powerful electrical illuminating force ever assembled in a position to be thrown on the falls; 60-in. projectors will be used, and the strength of the entire battery used in supplying current to the projectors used in the lighting display will be equal to about 1000 hp.

Chicago.

FISHER BUILDING, February 24, 1909.—(*By Telegraph.*)

The feature of overshadowing importance in the developments of the week was the open abandonment of all pretense of price maintenance on rolled products except Rails, and a resultant drop in prices. Although not wholly unanticipated, the radical nature of the step taken has completely upset the market and turned it adrift in an uncertain course with no known soundings as to values. The mill interests have hardly had time to gauge the situation and get their bearings, and the prices now ruling can only be indicated in a general way. They will doubtless speedily find a definite level through competition, but just now both buyers and sellers are a good deal in the dark and are feeling their way. The most significant outcome of the new régime so far as this market is concerned is the announcement that Chicago will hereafter be a basing point in naming prices on such products as are turned out by the mills of the Steel Corporation in this district, which will be established without reference to the freight rate from Pittsburgh as an arbitrary differential. Some sort of a differential will, of course, be observed, but just what it will amount to has not been fully determined. Only two full business days have elapsed since the news of the break became public, and buyers have not had time to take account of the new conditions, so that it is too early to judge of the effect it will have in stimulating business. The opinion is freely expressed on all sides that the ultimate results will be decidedly beneficial, and the general tone of comment is of an optimistic nature. Once convinced that the bottom has been reached, it is believed that a buying movement for the replenishment of stocks will begin.

Pig Iron.—The aggregate tonnage involved in the transactions of last week was insignificant. The purchases made were almost exclusively for filling in requirements and for prompt shipment. The events of the week in the finished Steel market undoubtedly exerted a depressing influence on Pig Iron, which had been drifting along rather unsteadily for some time. The demand, however, has been too light to test seriously the strength of values as exhibited by current quotations, which remain unchanged. The absence of any offers of round quantities leaves it an open question as to whether $12.50, Birmingham, for No. 2 Foundry, represents the extreme limit of producers. The most hopeful feature of the situation just now is that requests for deferred deliveries are few. This would indicate that the majority of consumers have at least not overestimated their prospective purchases for the first quarter. There are no inquiries of any consequence coming out, and both sides of the market are quietly awaiting developments. The following quotations are for February and March delivery, f.o.b. Chicago:

Lake Superior Charcoal	$19.50 to $20.00
Northern Coke Foundry, No. 1	17.00 to 17.50
Northern Coke Foundry, No. 2	16.50 to 17.00
Northern Coke Foundry, No. 3	16.00 to 16.50
Northern Scotch, No. 1	17.50 to 18.00
Southern Coke, No. 1	17.35 to 17.85
Southern Coke, No. 2	16.85 to 17.35
Southern Coke, No. 3	16.35 to 16.85
Southern Coke, No. 4	15.85 to 16.35
Southern Coke, No. 1 Soft	17.35 to 17.85
Southern Coke, No. 2 Soft	16.85 to 17.35
Southern Gray Forge	15.35 to 15.85
Southern Mottled	15.10 to 15.60
Malleable Bessemer	16.50 to 17.00
Standard Bessemer	17.90 to 18.40
Jackson Co. and Kentucky Silvery, 6 %	19.90 to 20.40
Jackson Co. and Kentucky Silvery, 8 %	20.90 to 21.40
Jackson Co. and Kentucky Silvery, 10 %	22.90 to 23.40

Billets and Rods.—Until Thursday of last week the orders and inquiries received for Forging Billets were merely a reflection of the general trend of demand as exhibited in the small transactions which have constituted the full volume of business for some time. Following the break in prices, and its unsettling effect upon values, trading has been almost wholly suspended. No quotation on Forging Billets for this market is obtainable at the present time. It is generally believed, however, that prices will be reduced about $3 a ton, but for the time being each transaction is being handled in the light of circumstances and conditions surrounding it. While no change has been announced in Wire Rod prices, the feeling of uncertainty that exists acts as a bar to the placing of orders and specifications at present.

Rails and Track Supplies.—In spite of the persistent rumors afloat of a radical cut in Standard Rails, it is officially announced that no change has been made from the recognized price of $28, Pittsburgh. The Illinois Steel Company's allotment of the New York Central's order was increased last week 10,000 tons, making the total 33,600 tons. Aside from this, the only other new business entered was a lot of 1000 tons taken by the same interest. The most active demand from the railroads is in Spikes and Bolts, specifications for which are being furnished in fairly liberal quantities. The regular quotations on Light Rails have been reduced $1 a ton, and while these prices represent the general level, they are being shaded from $1 to $2 a ton in Southern and Eastern territory, where the freight rates are against this market. The revised prices for Light Rails are as follows: 25 to 45 lb., $25; 20 lb., $26; 16 lb., $27; 12 lb., $28.

Structural Material.—It is too early to tell what the immediate effect of the drop in prices of plain material will be as regards the stimulation of buying. The attitude of consumers at the present moment seems to be one of hesitation, pending assurance as to the extent of the decline and the establishment of bottom prices. The contracts for fabricated material placed last week included 800 tons by the Lumberman's Portland Cement Company, Carlyle, Kan., with the Minneapolis Steel & Machinery Company; 1600 tons by the Bettendorf Axle Company to Geo. W. Jackson, Inc.; 850 tons for new buildings of the Merrimac Portland Cement Company taken by the Indiana Bridge Company, the price being $65,000 erected. Dyer Brothers of San Francisco secured two contracts, one of 1140 tons for the Scottish Rite Temple, the other 700 tons for the Union Trust Building for the construction of which foreign shapes will be used, which, it is stated, are laid down at San Francisco at a base price of 1.95c. for plain material. Two other contracts reported to be placed included 2000 tons for the Security Investment Company's Building, Portland, Ore., and 586 tons for the Kohler Chase Building, San Francisco, but no information as to who secured them is available. As far as prices of plain material are concerned the market is an open one and cannot be quoted with accuracy. The leading interest names 1.50c., Chicago, as a nominal price, but this, of course, cannot be accepted as representing the actual basis upon which business is being placed. It is currently reported that 1.25c., Pittsburgh, has been reached.

Plates.—No rush of inquiries has followed the announced cut in prices, but such evidences of interest will probably be plentiful within the next few days. Two holidays have intervened since the break was announced, and there has, therefore, been scant opportunity for buyers to communicate with the mills. The question of price is the absorbing topic of interest, and it is generally understood that the market is an open one, in which any quotation that may be named is only nominal. On this point the mill interests are considerably at sea, not being in touch as yet with new quotations. The leading interest has named 1.50c., Chicago, in a tentative way, but it is understood that the actual price at which business is being taken is well inside this figure.

Sheets.—Appeals for information and inquiries for prices are beginning to come in from manufacturers and jobbers at a lively rate. Some business is doubtless being placed, but transactions in this as in other lines are shrouded with so much secrecy that it is impossible to determine the extent of the movement. The trade, being generally advised of the decline in prices, is anxious to know the present state of the market. From the best information obtainable here the drop up to this time amounts to about $4 a ton on Galvanized and Black Sheets. There are reports, however, of $6 below the former ruling price being done in Pittsburgh. It is impossible in the present unsettled condition of affairs to submit specific quotations that would fairly represent current prices.

Bars.—Prior to the reduction in prices of rolled products made last week considerable cutting had already developed in Steel Bars. One conspicuous case involving considerable tonnage was the placing of a contract by a mill in the Chicago District which netted very close to 1.30c., at mill. The nominal quotation made to-day is 1.40c., Chicago, but in view of the price established by recent competition, it is not at all likely that in a wide open market such a price can be realized. It is quite impossible to say what prices have been established by recent transactions, and it will probably be some days, possibly weeks, before anything like a settled and generally recognized price basis is reached. Iron Bars are nominally quoted at 1.40c., Chicago, and Steel Hoops, No. 13 and lighter, 1.60c., Pittsburgh.

Merchant Pipe.—About all that is known of the market situation respecting Merchant Pipe is that prices have been reduced approximately 5 points. Representatives of leading interests have not as yet received detailed information as to the new discounts which will apply. A few orders have been received this week with instructions to enter at the bottom prices, but there has been no general rush of inquiries, and the aggregate of business so far placed is light.

Boiler Tubes.—Prices have been revised, but the new discounts are not available here to-day. The announced recession of prices has created very little stir among consumers. Not much new business has resulted, and the inquiries received in the past few days, while somewhat more numerous, do not indicate much anxious interest on the part of buyers.

Merchant Steel.—The specifications for Merchant Steel and miscellaneous Shapes in the past fortnight are slightly above the average for any like period this year. The drop in price of finished material had the effect of holding up orders toward the end of the week, in consequence of which little business has since been entered. The representatives of mills making these products are not in position to-day to quote

prices which will probably be revised in a day or two, in accordance with existing conditions.

Cast Iron Pipe.—The business of the week was comprised mainly of small routine orders, there being no large contracts up for consideration. Bisbee, Ariz., opened bids on 1000 tons February 20, but no award was made, the letting being deferred until March 2. The city of South Bend, Ind., will let 250 tons this week. We quote nominally, per net ton, Chicago, as follows: Water Pipe, 4-in., $28; 6 to 12-in., $27; 16-in. and up, $25, with $1 extra for Gas Pipe.

Metals.—Metals, both new and old, are generally depressed, in sympathy with the decline in Steel. Consumers are not buying anything more than is actually required for current needs. Copper, Lead and Spelter are all lower, Pig Tin and Zinc being the only Metals in the list that show any degree of firmness. Quotations are as follows: Casting Copper, 13¼c.; Lake, 13⅜c. to 14½c., in car lots, for prompt shipment; small lots, ¼c. to ⅜c. higher; Pig Tin, car lots, 30c.; small lots, 34½c.; Lead, Desilverized, 3.95c. to 4.05c., for 50-ton lots; Corroding, 4.20c. to 4.30c., for 50-ton lots; in car lots, 2¼c. per 100 lb. higher; Spelter, 5c. to 5.10c.; Cookson's Antimony, 10½c., and other grades, 9¾c. to 10¼c.; Sheet Zinc is $7, f.o.b. La Salle, in car lots of 600-lb. casks. On Old Metals we quote: Copper Wire, Crucible Shapes, 13c.; Copper Bottoms, 11¼c.; Copper Clips, 11c.; Red Brass, 11¼c.; Yellow Brass, 9c.; Light Brass, 7c.; Lead Pipe, 3.75c.; Zinc, 2½c.; Pewter, No. 1, 21c.; Tin Foil, 23c.; Block Tin Pipe, 26c.

Old Material.—No quieter period than that experienced last week has been encountered in a long while. Transactions were so few and unimportant that it is difficult to determine the actual level of values. Although lacking a definite criterion in actual sales, it is safe to say that the market is weaker all along the line. How far the reductions in new rolled products will affect Scrap values is as yet undetermined, but that it will have a depressing influence can hardly be questioned. For the present, however, there is nothing upon which to base revised prices. Leading dealers declare that it is unlikely that any of the large yard stocks now held will be forced upon the market in the near future. The Chicago, Burlington & Quincy is this week offering a list amounting to 2250 tons, in which there are 625 tons of Rerolling Steel Rails and 700 tons of Wrought. The following prices are per gross ton, f.o.b. Chicago:

Old Iron Rails	$18.25 to $18.75
Old Steel Rails, rerolling	15.00 to 15.50
Old Steel Rails, less than 3 ft	14.50 to 15.00
Relaying Rails, standard sections, subject to inspection	22.50 to 23.50
Old Car Wheels	15.25 to 15.75
Heavy Melting Steel Scrap	13.50 to 14.00
Frogs, Switches and Guards, cut apart	13.50 to 14.00
Mixed Steel	11.75 to 12.25

The following quotations are per net ton:

Iron Fish Plates	$15.00 to $15.50
Iron Car Axles	18.50 to 19.00
Steel Car Axles	17.00 to 17.50
No. 1 Railroad Wrought	12.75 to 13.25
No. 2 Railroad Wrought	11.75 to 12.25
Springs, Knuckles and Couplers	13.00 to 13.50
Locomotive Tires, smooth	14.00 to 14.50
No. 1 Dealers' Forge	10.00 to 10.50
Mixed Bushelling	7.75 to 8.25
Iron Axle Turnings	7.75 to 8.25
Soft Steel Axle Turnings	7.75 to 8.25
Machine Shop Turnings	7.75 to 8.25
Cast Borings	6.00 to 6.50
Mixed Borings, &c	6.00 to 6.50
No. 1 Mill	7.75 to 8.25
No. 2 Mill	6.75 to 7.25
No. 1 Boilers, cut to Sheets and Rings	9.50 to 10.00
No. 1 Cast Scrap	12.75 to 13.25
Stove Plate and Light Cast Scrap	11.75 to 12.25
Railroad Malleable	12.25 to 12.75
Agricultural Malleable	11.00 to 11.50
Pipes and Flues	9.50 to 10.00

Philadelphia.

PHILADELPHIA, PA., February 23, 1909.

It has been a long time since the Iron and Steel trades have been so badly upset as at present. Very heavy cuts in prices of finished materials have been announced, and no one is prepared to say what the result of the price war will be. It is interesting to note that practically all of the producers in this territory are taking no precipitate action, but following a waiting policy and will not take the initiative in making extremely low prices. On some rolled products a reduction of $4 a ton has been made, but this will not induce buyers to come into the market, when rumors of still heavier reductions are reported from other trade centers. Some have adopted the plan of allowing the low priced seller to take the business at present and get their share later on when prices have reached a stable basis. In the meantime buyers will no doubt hold off, but as soon as a bottom price—whatever it may be—is reached a good general buying movement is expected. Some little cancellation of orders for Plates placed at the old price basis is reported, usually a concession being made and the business held, but the aggregate tonnage affected has been small.

Pig Iron.—The market, which had been rather quiet, became lifeless on the announcement of the open market for rolled products. That the price of Pig Iron must recede, if prices of Steel were cut very extensively, was certain. Buyers who were in the market therefore withdrew for the time and will probably hold off until they can see what develops. The little business transacted has been of the carload class, the only exceptions being a lot of 1000 tons of low grade Southern Iron to a local Pipe foundry for early delivery, at close to $12.50, Birmingham basis, for No. 2 Foundry, and 400 tons of misfit Low Phosphorus Iron, disposed of by another seller on the $21.50, delivered, basis, for standard Low Phosphorus. Prices are largely nominal. Inquiries are practically nil, except for occasional carloads to meet immediate requirements. Prices of some grades of Foundry Iron, even in the absence of business, are lower, and some sellers express a willingness to shade recent prices fully 50c. a ton for desirable business, and might even better this for a large lot for shipment in the second quarter. There seems to be a disposition on the part of sellers to get down to bottom prices, and orders for any good quantity will probably be taken at close to actual cost. The statistical position of the furnaces in this territory is surprisingly good. According to the monthly reports of the Eastern Pig Iron Association, stocks on hand have shown a recession, while there has, of course, been a falling off in new orders, many furnaces are shipping more than they are making. Melters are taking deliveries freely and it is believed have but light stocks in their yards. On the present basis, therefore, production in this section does not appear to be in excess of the demand. No sales of Forge are reported, and while it is nominally quoted at $16, delivered, this price could be materially shaded. Basic and Low Phosphorus Iron are uncalled for. Basic could be had in round lots pretty close to $16, while $21.50 would probably be the top of the market for Low Phosphorus. The market has not been seriously tested, but the following range represents sellers' ideas for moderate lots for fairly prompt delivery in buyers' yards, eastern Pennsylvania and nearby territory:

Eastern Pennsylvania, No. 2 X Foundry	$16.75 to $17.25
Eastern Pennsylvania, No. 2 Plain	16.25 to 16.75
Virginia, No. 2 X Foundry	17.25
Virginia, No. 2 Plain	17.00
Gray Forge	16.00
Basic	16.00 to 16.50
Low Phosphorus	21.50

Ferromanganese.—The market has quieted down considerably. Few inquiries are about, particularly from consumers in this district, who are now pretty well covered for their requirements for the larger portion of the year. Quotations are comparatively firm, $42 to $43.50, Baltimore, being named, according to delivery.

Billets.—Buyers are holding off pending some adjustment of prices. Producers in this territory have announced no reductions, and just what price would be named for a round tonnage is problematical. In the absence of demand quotations are nominally $25, Eastern mill, for Ordinary Rolling Steel, with the usual advance of $2 a ton for Forging Steel, except on high carbons and special sizes, which take the usual extras.

Plates.—Little business has been transacted since the reduction in prices. For several days sellers have refused to make quotations, while consumers have made heavy inquiries, particularly with a view of getting a line on prices. Some small orders placed on the old price basis have been cancelled, but sellers usually manage to hold the order by a concession in price. Producers in this immediate district are quoting 1.55c., delivered, for moderate lots, but are taking no business at that figure, except they be of an urgent nature. Several large orders which were about to be placed have been held up until prices get to the bottom; the 6000 tons recently reported placed by the Cramps is understood to have been among the number. One Western interest is reported as quoting 1.50c., delivered, in this territory, but is not understood to have booked any business. One of the local shipyards came out to-day with an inquiry for several thousand tons of Ship Plates, but it is not yet known whether it is bona fide business or simply a test of the market.

Structural Material.—Buying has been suspended until it becomes better known what prices will be. Several small lots for immediate use have been sold at 1.55c., delivered, but the market has not been tested by any good sized business. Both buyers and sellers are waiting for further develments, the tendency being toward lower prices.

Sheets.—Producers in this district contend that they will not meet the reported heavy cuts made by the Western mills. Very little business is being offered, however, and no fresh quotations have been made. The open market will result hereafter in the mills here naming prices, f.o.b. Eastern mill, eliminating the freight differential.

Bars.—The principal interest has been in Steel Bars, which have been cut to 1.40c., delivered, in this territory, at which price some moderate tonnage has been taken. On large lots this price would probably be cut to 1.35c., delivered. At these prices Iron Bars are almost out of the running, and mills in this territory have as yet made no particular effort to meet the reduction, to do which cheaper raw

materials and probably lower cost of manufacture would be necessary. Eastern mills are quoting 1.45c. to 1.50c., delivered, in this vicinity on Refined Iron Bars, but get practically no business.

Coke.—The market is quiet, and prices still show weakness. Very small sales of Foundry Coke on a $2 to $2.25, oven basis, are reported. Furnace Coke is less active, and is quoted $1.50 to $1.65, at oven. For delivery in this territory the following prices rule:

Connellsville Furnace Coke	$3.75 to $3.90
Foundry Coke	4.25 to 4.50
Mountain Furnace Coke	3.35 to 3.50
Foundry Coke	3.85 to 4.10

Old Material.—Prices are moving downward in the same proportion as Pig Iron and new rolled products. The market is at a standstill, neither buyer nor seller exhibiting any interest whatever. Sales have been a negligible quantity, and it is impossible under existing conditions to name quotations. Consumers could not be induced to buy at any price, and both sides are awaiting further developments.

The Metal Mfg. Company, B. D. Smoot, president and general manager, has opened an office in room 1826 Land Title Building, Philadelphia, and will engage in selling Metals, Alloys and Foundry Supplies. The company will make a specialty in the Ferroalloys, such as Manganese, Silicon, Vanadium and Chrome; also Metallic Manganese, Manganese Copper, Spiegeleisen and Manganese Oxide.

Cincinnati.

CINCINNATI, OHIO, February 24, 1909.—(*By Telegraph.*)

All factors in Iron and Steel are intensely interested in the progress of the war in finished products. As yet very little change is observable in the sentiment of buyer and consumer, while the big selling agencies are mystified. The majority have little to say on the subject. The impression here is that the largest interests are quietly seeking probable purchasers. No quotations are issued and no prices are made unless a definite tonnage is put up to the seller when a satisfactory price is made and the contract signed. This is expected to continue for 30 days or so, until a fairly good buying movement is started and business in the machinery and manufacturing and building lines is well along when the prices may be gradually restored. The Southern furnacemen have weakened, and there is a disposition manifest to meet the consumer with some concessions that have hitherto been withheld. The Scrap dealers are as badly in the air as the Steel people, and some of them candidly admit that they do not know what the prices are.

Pig Iron.—The larger agencies report that the melt is holding up remarkably well, and indeed shows some improvement, and now that the backbone of the alleged combine in the Steel trade has been broken inquiries are expected to multiply rapidly. A normal level of $12.50, Birmingham, for No. 2 and $15 at Ironton, for the Northern product has been reached, with some Southern resale Iron striking the $12 plane. The scarcity of low grades seems to be none the less marked than for some time back, and such few inquiries as are noted are for No. 4 Foundry, Forge or special analysis Iron. The recent inquiry from a central Ohio car manufacturer for an analysis Iron is said to have been satisfied with 50 tons or so of Columbus Iron on an old contract. A large manufacturer of pumps in central Ohio, said to be on the verge of a reorganization, is asking for 400 tons of either Northern or Southern No. 4 Foundry for balance of first half. A central Ohio jobbing foundry wants about 200 tons of No. 2 Soft for the last half. One local agency has an inquiry from Boston for 600 tons of analysis Iron. A Kentucky foundry has an inquiry out for prices on 400 tons of No. 4 Southern for early shipment. A large harvester company, which is said to be in the market for considerable Iron, is reported here to have bought 10,000 tons from a Wisconsin furnace. Inquiries for prices on last half deliveries are accumulating, but in the main the ideas of furnacemen and consumers are far apart. Nothing is heard of Basic or Bessemer. For immediate delivery, and for balance of the first half, including freight rates from Birmingham of $3.25, and from the Hanging Rock District of $1.20, we quote, delivered Cincinnati, as follows:

Southern Coke, No. 1 Foundry	$16.25 to $16.75
Southern Coke, No. 2 Foundry	15.75 to 16.25
Southern Coke, No. 3 Foundry	15.25 to 15.75
Southern Coke, No. 4 Foundry	14.75 to 15.25
Southern Coke, No. 1 Soft	16.25 to 16.75
Southern Coke, No. 2 Soft	15.75 to 16.25
Southern Coke, Gray Forge	14.25 to 14.75
Southern Mottled	13.75 to 14.25
Ohio Silvery, 8 per cent. Silicon	19.70
Lake Superior Coke, No. 1	16.70 to 17.20
Lake Superior Coke, No. 2	16.20 to 16.70
Lake Superior Coke, No. 3	15.70 to 16.20
Standard Southern Car Wheel	22.25 to 23.25
Lake Superior Car Wheel	21.75 to 22.75

(*By Mail.*)

Coke.—A few sales are reported at $1.50 to $1.55 on some isolated sales of spot Furnace grades in the Connellsville region, but standard brands are held rather firmly at $1.60 to $1.90, at oven, according to delivery. West Virginia Furnace Cokes are a little stiffer and range from $1.75 to $1.90; Wise County and Pocahontas grades are about the same price. On 72-hr. Foundry Connellsville Coke is quotable at $1.90 to $2.50, at oven, and Wise County and Pocahontas about $2.10 to $2.25.

Bars.—There are but two strictly local mills here making Bar Iron, with a daily output of not to exceed 150 tons. The largest of these, the Licking Rolling Mills, announces itself disinclined to take business at the present level. The only figures on Steel products that can be authenticated here through the sales agencies of the Eastern corporations are 1.20c., Pittsburgh, on Bars and 1.30c., Pittsburgh, on Plates and Structural Shapes.

Sheets.—The best information obtainable here to-day is that Sheets have been cut about $4 to $6, and the strongest factors in this market are simply deferring replies to inquiries that are flowing until they are satisfied of the exact situation.

Old Material.—We quote, in the absence of business, the following nominal prices to the trade, f.o.b. Cincinnati:

No. 1 R. R. Wrought, net ton	$11.50 to $12.50
Cast Borings, net ton	6.00 to 6.50
Heavy Melting Steel Scrap, gross ton	12.50 to 13.50
Steel Turnings, net ton	7.00 to 7.50
No. 1 Cast Scrap, net ton	11.50 to 12.00
Burnt Cast, net ton	8.00 to 8.50
Old Iron Axles, net ton	17.00 to 17.50
Old Iron Rails, gross ton	15.50 to 16.00
Old Steel Rails, short, gross ton	13.50 to 14.00
Old Steel Rails, long, gross ton	13.50 to 14.00
Relaying Rails, 56 lb. and up, gross ton	20.00 to 20.50
Old Car Wheels, gross ton	14.50 to 15.00
Low Phosphorus Scrap, gross ton	13.00 to 13.50

Birmingham.

BIRMINGHAM, ALA., February 22, 1909.

Pig Iron.—The disposition now being manifested by prospective purchasers is more encouraging, and the market generally has a cheerful tone, but the demand during the past week was of such a desultory nature and involved an aggregate tonnage so limited that it cannot be said there has been an improvement in conditions. So far as is known, the sales recently effected were at the figures being adhered to as the market price. One of the leading interests reports the engagement of some 500 tons in various lots on the basis of $13, Birmingham, for No. 2 Foundry. A sale of 1500 tons of High Manganese Iron is reported at $13.50, Birmingham. The resale Iron available has figured but little in recent transactions, yet the fact remains that the business transacted represented a mandatory demand, and in each case a preference in brands is known to have featured. There has been no material improvement in the number of inquiries received, and from present indications developments during the coming week will not be dissimilar to those of the week just ended, but there is a much larger tonnage being moved at this time than at the time of last report and in some lines of foundry trades there is tangible evidence of a larger consumption. Any effect that the revision of Steel prices will have on the foundry trade can of course not yet be conjectured with accuracy, although parties most conversant with the situation are not apprehensive of serious fluctuation in prices. The prospects for the immediate future as they appear to producing interests is indicated by the fact that the output has not been curtailed, notwithstanding the accumulations on furnace yards. It is implied from such action that the comparison of tonnage so far engaged with the consumption reasonably expected, as compiled in recent statistics, would indicate the necessity of a stronger demand at a not far distant date.

Old Material.—The business offered during the week just ended was not of sufficient volume to test values. Dealers are apparently unchanged in their views and asking prices are not revised, yet, with the lack of interest on the part of consumers, the market is weak, and we quote their prices as nominal on carload lots per gross ton, f.o.b. cars here, as follows:

Old Iron Rails	$14.50 to $15.00
Old Iron Axles	15.50 to 16.50
Old Steel Axles	13.00 to 13.50
No. 1 Railroad Wrought	13.00 to 13.50
No. 2 Railroad Wrought	11.00 to 11.50
No. 1 Country Wrought	10.00 to 10.50
No. 2 Country Wrought	9.00 to 9.50
No. 1 Steel	10.00 to 10.50
No. 1 Machinery	10.50 to 11.00
Tram Car Wheels	11.50 to 12.00
Standard Car Wheels	13.00 to 13.50
Stove Plate and Light Cast	8.50 to 9.00
Cast Borings	5.00 to 6.00

Cast Iron Pipe.—To the list of lettings for the near future the requirements for the cities of Nashville and Memphis, Tenn., Cincinnati, Ohio, and St. Louis, Mo., are to be added. The inquiry from the City of Mexico is expected to take definite form within the coming week, while indications are more favorable for the placing of the entire requirement for the city of San Francisco, Cal. Producers' asking prices

are not changed, and it is understood that a firmer basis prevails. The price consideration in recent contracts involving attractive tonnages is reported as satisfactory in view of the unsteadiness in other lines. We note a material improvement in the demand for Cast Iron Soil Pipe and that the advance in price of some weeks past has been maintained. We quote Water Pipe as follows, per net ton, f.o.b. cars here: 4 in. to 6 in., $26; 8 in. to 12 in., $25; over 12 in., average, $24, with $1 per ton extra for Gas Pipe. These quotations are probably shaded on large municipal contracts.

Cleveland.

CLEVELAND, OHIO, February 23, 1909.

Iron Ore.—A few inquiries came out during the week, but no sales resulted, the furnaces making the inquiries not being ready to buy. With the probability of less severe winter weather and Ore not so badly frozen from now on, orders for shipment from the docks have increased considerably. Unless there is a pretty fair movement from now until the opening of navigation there will be more Ore on the docks at the opening of navigation than a year ago. Some vessel tonnage was chartered during the week at last season's rates, which, it is believed, will prevail during the year. Prices at Lake Erie docks, per gross ton, are as follows: Old Range Bessemer, $4.50; Mesaba Bessemer, $4.25; Old Range Non-Bessemer, $3.70; Mesaba Non-Bessemer, $3.50.

Pig Iron.—The market continues very quiet. No inquiries of any size have developed. A few sales of small lots of Foundry Iron were made by a local interest for shipment outside of this territory at $15.50 for No. 2, the largest lot being 200 tons. For city delivery local furnaces quote No. 2 Foundry at $16.25, delivered, Cleveland. Reports indicate that Foundry Iron is rather weak in the valley, No. 2 being quoted in some cases at $14.90. Shipments on contract are holding up fairly well, requests to withhold deliveries not being numerous. For the first quarter and first half we quote, delivered Cleveland, as follows:

Bessemer	$16.90
Northern Foundry, No. 1	$16.50 to 16.75
Northern Foundry, No. 2	16.00 to 16.25
Northern Foundry, No. 3	15.50 to 15.75
Gray Forge	14.75 to 15.00
Southern Foundry, No. 2	17.35
Jackson County Silvery, 8 per cent. Silicon	20.05

Coke.—The market continues quiet, with prices stationary. We quote Standard Connellsville Furnace Coke at $1.50 to $1.60, at oven, for prompt shipment, and $1.75 to $1.90 on contract. Connellsville 72-hr. Foundry Coke is held at $2 to $2.25 for spot shipment and $2.25 to $2.40 on contract.

Finished Iron and Steel.—The uncertainty as to prices which followed the declaration of an open market last week has only partially disappeared, and, except for immediate needs, buyers are awaiting developments before placing orders. Sales agents of the leading interest and the important independent producers quote 1.20c., Pittsburgh, as their minimum price at present on Steel Bars, and 1.30c., Pittsburgh, on Plates and Structural Material. These prices appear to be firmly adhered to at present, but mill agents admit that conditions may arise at any moment that may warrant a further reduction. The mills making these quotations are those that are understood to have maintained the established prices during the price cutting of the past few months. The reduction in prices has resulted in the receipt of a large number of inquiries by all the mill agencies. A large share of these inquiries, coming from consumers that have never been buyers from the mill receiving the inquiry, are believed to be simply market feelers. Some new business in Plates, Shapes and Bars, however, has resulted from these inquiries, orders being for immediate needs. Buyers feel that the bottom prics have not been reached and are not disposed to place contracts for future delivery until the market has been thoroughly tested. So far mill agencies are quoting present prices only for immediate delivery, or, in the case of some specified work, for delivery within the next 60 or 90 days. There have been few cancellations of old contracts, mills having notified their customers that deliveries on contracts would be made at the new prices. When the announcement of the cut was made some orders were suspended, but the most of these were reinstated when the buyers were told that they would have the benefit of the new prices on orders already in and unfilled. The price cut has been followed by some increase in specifications. These appear to be largely from consumers, who, because of the talk of price cutting, had been ordering very sparingly recently and had allowed their stocks to run very low. The Sheet situation has in no way cleared up as yet. The leading independent mills are in the dark as to the prices that are being quoted by the leading producer, and until they gain accurate information as to what is doing they are refraining from making any quotations. It is understood that the independents will meet the prices made by the larger interest. One local mill shut down this week to await market developments. A local Plate mill announces that it is as yet making no quotations on Plates. Local Bar Iron mills have decided not to meet for the present the price on Steel Bars and continue to quote Bar Iron on the basis of 1.35c., Pittsburgh. A good inquiry might bring out a lower quotation. Jobbers as yet have made no change in their warehouse prices. Bids will be received February 24 for the erection of the Brotherhood of Locomotive Engineers building, requiring about 2100 tons of Structural Material. This work will test the market. There is an inquiry from a bridge builder for 2000 tons. The Anchor Line has closed a contract with the American Shipbuilding Company for a package freighter, which will require about 3000 tons of Plates and Shapes, for which the contract has not been closed. Another inquiry is for 1000 tons of Slabs.

Old Material.—The market is considerably weaker as a result of the cut in prices on finished lines. Steel making Scrap has suffered the most, and several grades have declined $1 a ton. Quotations for the present, however, are largely nominal. The market has not adjusted itself to a new price basis since prices on new rolled products were reduced, and no sales are reported on which to base new prices. No inquiries are coming from the mills, and they are not expected to buy until new orders begin to come in. Dealers look for an early improvement in the demand, but expect that lower prices on Scrap will prevail. Dealers' prices, per gross ton, f.o.b. Cleveland, are as follows:

Old Steel Rails	$14.50 to $15.00
Old Iron Rails	18.00 to 18.50
Steel Car Axles	19.00 to 19.50
Old Car Wheels	14.00 to 14.50
Heavy Melting Steel	14.00 to 14.25
Relaying Rails, 50 lb. and over	21.50 to 22.50
Agricultural Malleable	12.50 to 13.00
Railroad Malleable	14.00 to 14.50
Light Bundled Sheet Scrap	8.50 to 9.00

The following prices are per net ton, f.o.b. Cleveland:

Iron Car Axles	$18.50 to $19.00
Cast Borings	7.00 to 7.50
Iron and Steel Turnings and Drillings	8.00 to 8.50
Steel Axle Turnings	10.00 to 10.50
No. 1 Busheling	12.25 to 12.75
No. 1 Railroad Wrought	14.00 to 14.50
No. 1 Cast	13.00 to 13.50
Stove Plate	11.00 to 11.50
Bundled Tin Scrap	9.00

St. Louis.

ST. LOUIS, February 22, 1909.

The month thus far has been characterized by stormy weather to an unusual extent, which has resulted in affecting some lines of business unfavorably, especially building operations and other outdoor work. Among enterprises now under way is the McKinley Bridge which will, when completed, be one of the longest over the Mississippi River. The piers of the bridge are completed and the material for the superstructure has been ordered. The bridge will be finished by the end of the year. It will cost about $2,500,000. Plans are now ready for the new municipal courts building, which is to be four stories, a basement and attic, and with a jail, which will have five stories and a basement, the entire structure to cost about $1,500,000. The main building will be 231 x 312 ft., and the jail is to be 44½ x 185 ft. The main building will have a tower 185½ ft. high.

Coke.—Such demand as exists is for small lots. Some houses quote $2.40 for best known brands for contract business, and name $2 to $2.15 for spot shipment. Others quote the market at $1.90 for spot and $2.25 to $2.40 for 72-hr. Foundry, f.o.b. Connellsville, for the entire year's shipment.

Pig Iron.—Dullness seems to prevail in the larger offices. One house reports that its week's sales would reach about 900 tons of Southern Iron and all the leading sellers state there is some inquiry for lots ranging from 100 to 200 tons. Also there are some large inquiries pending, including that for 2000 tons Malleable reported last week. In some instances parties are seeking to arrange to have shipment extended and where this would reach into the second half, a price adjustment difficulty is met with. Some resale Iron is being offered in this market with the result that prices have been somewhat affected. For No. 2 Foundry, $12.50 to $13, f.o.b. Birmingham, shipment over the first half, is the present market quotation. For small lots of standard brands no sales below $13 have been reported.

Finished Iron and Steel.—The demand for Structural Material is moderate and confined to small contracts. With the near approach of the building season, it is expected that a marked improvement will be witnessed next month. The open market on prices for Bars and Bar products will, it is thought, stimulate buying for a while at least. Rails are quiet, but the demand for Track Material continues good.

Old Material.—There is no disguising the fact that the situation in Scrap Iron and Steel is quite unsatisfactory by reason of the present and prospective dullness, there being scarcely any demand from consumers and very little doing among the dealers in the way of trading among themselves. The only exception to this state of matters is that of Relaying Rails, which continue in demand with prices firm.

There are no railroad lists out and little or no shipping is going on, so far as new business is concerned. No marked improvement is expected until spring, when a renewal of building will bring about a better demand for Finished Iron and Steel, and in turn stimulate trade in Pig and Scrap Iron. Prices in the absence of transactions are practically nominal. We quote, per gross ton, f.o.b. St. Louis, as follows:

Old Iron Rails	$18.00 to $18.50
Old Steel Rails, rerolling	19.50 to 20.00
Old Steel Rails, less than 3 ft	14.00 to 14.50
Relaying Rails, standard sections, subject to inspection	23.50 to 24.50
Old Car Wheels	15.50 to 16.00
Heavy Melting Steel Scrap	13.25 to 13.75
Frogs, Switches and Guards, cut apart	13.50 to 14.00
Mixed Steel	9.75 to 10.25

The following quotations are per net ton:

Iron Fish Plates	$15.50 to $16.00
Iron Car Axles	19.50 to 20.00
No. 1 Railroad Wrought	13.50 to 14.00
No. 2 Railroad Wrought	12.50 to 13.00
Railway Springs	12.00 to 12.50
Locomotive Tires, smooth	13.00 to 13.50
No. 1 Dealers' Forge	11.00 to 11.50
Mixed Borings	6.50 to 7.00
No. 1 Boilers, cut to Sheets and Rings	9.50 to 10.00
No. 1 Cast Scrap	12.50 to 13.00
Stove Plate and Light Cast Scrap	10.00 to 10.50
Railroad Malleable	10.50 to 11.00
Agricultural Malleable	10.00 to 10.50
Pipes and Flues	10.00 to 10.50
Railroad Sheet Scrap	10.50 to 11.00
Railroad Grate Bars	11.00 to 11.50
Machine Shop Turnings	9.00 to 9.50

Lead, Spelter, Etc.—The market for Pig Lead is quiet at 3.87½c. to 3.93c., East St. Louis. Lead Ore ranges from $24.50 to $25.50 per 1000 lb., Joplin. Spelter is neglected, with prices nominal at 4.67½c. to 4.80c., East St. Louis, and no buyers for any quantity, a situation unusual at this season of the year. Zinc Ore is held at $35 to $38 per ton base for low and higher grade. Leading men in the trade state that the talk about the tariff is not the correct explanation for all the present dullness. The fact is there has been some overproduction. When the surplus stocks of ore and metal are reduced, conditions will show a decided improvement. Tin is ½c. off; Antimony no change, but weaker; Copper, ⅛c. off. The demand for metals is fair, but not continuous.

Pittsburgh.

PARK BUILDING, February 24, 1909.—(*By Telegraph.*)

Pig Iron.—The uncertain conditions existing in rolled products are reflected to a large extent in the Pig Iron market, which is stagnant. Last Summer and fall Pig Iron went through the same experience that has now overtaken rolled products, and prices on Pig Iron got down to cost, and in some cases below it. The recovery which started in October brought prices up about $1.50 a ton, but part of this has since lost. It is stated that to-day's prices on all grades of Pig Iron leave only a fair profit to the producer. In the absence of actual sales, we quote as follows: Standard Bessemer Iron, $15.50 to $15.75; Malleable Bessemer, $15.25; Basic, $15; No. 2 Foundry, $15, and Gray Forge, $14, all at Valley furnace, with a freight to Pittsburgh of 90c. a ton.

Steel.—Leading producers have not yet announced new prices on Billets, but may do so within the next four or five days. The prices to be fixed on Sheet and Tin Bars will be largely predicated on whether any reduction will be made in prices of Sheets or Tin Plate, and these have not yet been announced by the leading interests. Consumers who are asking the Steel interests for prices on Billets and Bars are simply told to make offers, and they will be considered. There are no authentic prices to-day on Billets or Bars, and we omit quotations.

(*By Mail.*)

The Steel trade is in a chaotic condition. So far no official reductions in prices have been announced with the exception of Pipes and Tubes, the former being cut from $8 to $10 a ton, and Tubes $6 a ton, except 2¾ to 5 in., which were cut $10. It is the general opinion that the open market will bring out delayed orders, and that after the trade has adjusted itself to the new conditions there will be constant improvement in demand and probably betterment in prices. At present, all are at sea as to what prices are actually ruling, and aside from the new discounts on Pipes and Tubes, and on Hoops and Bands, it is impossible to give accurate quotations. Reports are that Structural Material and Plates have been offered at 1.25c., a reduction of $7 a ton; Black and Galvanized Sheets at a reduction of $4 to $6 a ton, and Bars about $4 a ton. A few orders are being placed, but the large interests are advising their customers to pursue a conservative course, place orders for any material they need, and they will be taken care of. This will likely be the policy for the next several weeks. It is declared that none of the large interests will agree to enter contracts for long time delivery at prices now ruling. It is hoped that within a week or 10 days the situation will be clearer, but at present it is almost useless to make any reference to prices, sellers being as much in the dark as buyers.

Ferromanganese.—In sympathy with the general market, prices on Ferro are lower. It has been quoted at $42.50 to $43, seaboard, the freight rate to Pittsburgh being $1.95 a ton. A leading local consumer is reported to have contracted recently for 1000 tons for delivery over the next four to six months, at slightly less than $42.50, seaboard.

Ferrosilicon.—In the absence of sales we quote nominally at $62, Pittsburgh, for 50 per cent. It is probable that on a firm offer this price could be materially shaded.

Muck Bar.—In sympathy with the general situation Muck Bar is very weak, and it is doubtful what price would be made if any actual contract was offered.

Wire Rods.—No official reduction has been announced by the makers of Wire Rods, but they are advising their customers to place orders for any Rods needed, and they will be taken care of.

Steel Rails.—Press reports of a reduction of $3 a ton, or from $28 to $25, on standard sections are absolutely untrue. No contracts of moment have been placed in the past week, but specifications are coming in freely on some recent contracts, and the rolling schedule of the Edgar Thomson mill is better than for some time. Orders for Light Rails are fairly good, the Carnegie Steel Company having received new contracts and specifications in the past week for about 1500 tons. There has been no reduction in prices of Light Rails rolled from Billets. Prices on Rerolled Light Rails are from $3 to $4 a ton under prices asked for Light Rails rolled from Billets. Regular prices on the latter are as follows: $25 for 25 to 45 lb. Sections, with $1 advance for 20-lb., $2 advance for 16-lb., and $3 advance for 12-lb. Standard Sections are $28, at mill, and Angle Splice Bars, 1.65c., at mill.

Skelp.—It is impossible to tell what prices are ruling. No new orders are being placed, nor will there be until the situation is clearer.

Plates.—The Carnegie Steel Company and other leading makers are quoting Plates ¾ in. thick and 6¼ up to 100 in. wide at 1.30c., base, Pittsburgh, which is a reduction over the former regular price of $6 a ton. There are reports of Plates being offered at 1.25c., but these are not confirmed. As to whether the lower price will bring out heavy orders is a question, but it is believed that it will. The contract for Plates between the Pressed Steel Car Company and the Carnegie Steel Company which expired on February 14 has not been renewed, but there is no doubt that the Carnegie Steel Company will continue to take care of this consumer on its requirements of Plates.

Structural Material.—The open market has brought about a reduction in prices of Structural Steel of about $6 a ton; I-Beams and Channels, 3 to 15 in., inclusive, now being quoted at 1.30c., Pittsburgh. There are also reports of 1.25c. being named, but these reports are not confirmed. The McClintic-Marshall Construction Company has taken a Steel building for the Navle Engine Works, Erie, Pa., about 600 tons.

Sheets.—Actual prices now in effect cannot be stated. Reports are current of both Black and Galvanized Sheets being offered at a cut of $3 to $4 a ton, but these are only rumors. After the situation has cleared, an announcement will probably come from the leading Sheet interest of new prices, but this may not be for several days or possibly a week. In the meantime, practically no new orders are being placed.

Tin Plate.—No official announcement has come from the American Sheet & Tin Plate Company, nor from any of the other Tin Plate interests of lower prices. Until there is some definite official statement one way or the other, it is impossible to state accurately what prices are in effect.

Bars.—Steel Bars are being freely offered by the Carnegie Steel Company, and other makers on the basis of 1.20c., Pittsburgh, a reduction of $4 a ton. This makes a total reduction of $8 a ton in the price of Steel Bars since last June, at which time the price was reduced from 1.60c. to 1.40c. The lower price has not yet brought out any material increase in new orders, as buyers are carefully sizing up the situation before placing business. As regards Iron Bars, these will probably be reduced to the same extent as Steel Bars, which would make the price 1.30c., Pittsburgh, for delivery in the Pittsburgh District, and 1.22c., Pittsburgh, for Western shipment, or 1.40c., Chicago. This has not actually been done by the Bar Iron mills, but it is probable some announcement may be made this week.

Hoops and Bands.—Effective from Friday, February 19, makers of Hoops and Bands reduced prices $4 a ton, or to the basis of 1.60c., base, for Steel Hoops, full Hoop card prices, and Steel Bands to 1.20c., base, half Steel card extras, all f.o.b., Pittsburgh.

Railroad Spikes.—In sympathy with other lines, prices on Railroad Spikes will probably be reduced, but as yet no official announcement has been made. In the meantime no orders are being placed.

Merchant Steel.—In sympathy with other lines, prices on Merchant Steel and Shafting will probably be readjusted on a lower basis, but no official announcement has been made. No orders are being placed, consumers waiting to learn what prices are in effect.

Merchant Pipe.—Effective February 19, the leading Pipe mills have issued new discounts on Merchant Pipe of 80 off on ¾ to 6 in., with the usual one point on the base and 5 per cent. differential to leading jobbers. The new discounts show reductions ranging from $6 to $10 a ton. These prices prohibit mills that have not their own Steel plants, but buy Plates in the open market, from making Pipe at a profit. For the time being the Pipe business will be done by four or five of the leading mills that make their Pipe from the ore up.

Boiler Tubes.—Effective February 19, new discounts were issued on Steel Boiler Tubes, showing a reduction of $6 on all sizes, except 2¾ to 5 in., which were reduced $10 a ton. The new discounts on Iron Tubes have not yet been announced, but will probably show about the same reductions.

Iron and Steel Scrap.—There is absolutely no new buying. Dealers are giving their time now in looking after demurrage charges of the railroads and receiving cancellations from customers, who are trying every means in their power to get out of taking Scrap bought before the Steel market was declared open. It is impossible to get a clear idea of what prices are in effect, as consumers will not buy until the situation is clearer. Nominal prices, which no doubt would be materially shaded, if any actual business was offered, are about as follows, per gross ton, f.o.b. Pittsburgh: Heavy Steel Scrap, $15.50 to $15.75; Cast Iron Borings, $9.25 to $9.50; Bundled Sheet Scrap, $13 to $13.25; No. 1 Busheling Scrap, $13.50 to $13.75; No. 2, $9.50; No. 1 Railroad Wrought, $16 to $16.25; No. 1 Cast, $14.25 to $14.50; Iron Axles, $22 to $22.25; Sheet Bar Crop Ends, $17 to $17.25; Low Phosphorus Melting Stock, 0.04 and under, $18; Rerolling Rails, delivered, Cambridge, Ohio, $17, and delivered, Cumberland, Md., $17.50; Steel Axles, $18; Grate Bars, $11.25 to $11.50; Old Car Wheels, $16 to $16.25; Machine Shop Turnings, $11.25 to $11.50; Railroad Malleable Scrap, $14; Iron Rails, $17.50 to $17.75; Locomotive Tires, $16 to $16.25.

Coke.—Nothing is doing in sales nor will there be until the situation in the Steel market is clearer. The present general condition had already been discounted in the Coke trade, and materially lower prices are impossible, as it is doubtful if the most modern Coke plants making Standard grade Furnace Coke can sell it at $1.50 a ton and make a profit. Standard grades of Furnace have recently sold at this price, but they were forced sales of Coke that was loaded on cars and had to be moved. A large number of Coke ovens have been shut down in the past two weeks and there will be more. Producers will now try to conform output to demand. We quote Standard grades of Furnace Coke for prompt shipment at $1.55 to $1.60 per net ton at oven, but on other grades lower prices are being made. Standard makes of 72-hr. Foundry Coke for prompt shipment are offered at $1.85, at oven, while on contracts from $2 to $2.25 is quoted.

Buffalo.

BUFFALO, N. Y., February 23, 1909.

Pig Iron.—No noticeable effect on the Pig Iron situation is yet apparent as a result of the recent cut in prices of rolled products. It is expected that the increased demand for finished products resultant from the price reduction will tend to bring about an increase in the consumption of Pig Iron shortly. It is rather difficult to formulate an accurate price schedule, as the furnaces are as a rule considering each inquiry by itself on its particular conditions and quoting accordingly, but the quotations given below approximate as closely as possible the prices now being asked by the furnaces, f.o.b. Buffalo:

No. 1 X Foundry	$16.00 to $16.50
No. 2 X Foundry	15.50 to 16.00
No. 2 Plain	15.25 to 15.50
No. 3 Foundry	15.00 to 15.50
Gray Forge	15.00 to 15.25
Basic	15.75 to 16.25
Malleable Bessemer	16.50 to 17.00
Charcoal	20.50 to 21.00

Finished Iron and Steel.—A flood of inquiries is coming in. While it is yet too early to state that new business in large amounts will actually result, a number of good orders have already been booked in consequence of the lower prices, and the indications are that the reductions made will be productive of a large increase in buying, especially in Bars, Plates and Structural Material. Reports from most of the producers and distributers in this district go to show that a spirit of conservatism is being observed in the matter of lowering of prices; one of the largest sellers in the local market stating that its policy will be to take care of and protect its own contract customers instead of endeavoring to encroach upon the field of its competitors' regular or contract customers by underbidding. It is understood that by reason of the open market mills will make sales f.o.b. their works plus the actual freight to destination; Buffalo thereby becomes a basing point.

Old Material.—The market is in a more or less demoralized condition on account of the open prices on finished products. Holders of Scrap are not offering it and consumers are making no move to buy, knowing the instability of prices at the present time and awaiting more firmly established conditions. With an absence of sales the prices quoted below are entirely nominal, f.o.b. Buffalo:

Heavy Melting Steel Scrap	$14.50 to $15.00
Low Phosphorus Steel Scrap	19.00 to 19.50
No. 1 Railroad Wrought	15.00 to 15.50
No. 1 Railroad and Machinery Cast Scrap	14.50 to 15.00
Old Steel Axles	18.00 to 19.00
Old Iron Axles	21.00 to 22.00
Old Car Wheels	15.00 to 15.50
Railroad Malleable	13.50 to 14.00
Boiler Plate	12.00 to 12.50
Locomotive Grate Bars	11.75 to 12.25
Pipe	11.75 to 12.25
Wrought Iron and Soft Steel Turnings	9.00 to 10.00
Clean Cast Iron Borings	7.00 to 8.00
No. 1 Busheling Scrap	13.00 to 13.50

Metal Market.

NEW YORK, February 24, 1909.

Pig Tin.—A continuance of the dull trade noted since January 1 prevails. Prices have been erratic, and close slightly higher than last week, as follows:

	Cents.
February 17	28.75 to 28.80
February 18	28.55
February 19	28.22½ to 28.25
February 23	28.90
February 24	28.62½

The low price reached on Friday simply followed the London market, there being no special news in New York to account for it. In fact, there are no developments here which would tend to either animate or depress the market. The continued scarcity of available Tin is a topic much discussed, and it seems more pronounced than ever. The New York Tin trade is represented by only four sellers of spot metal, and but a few others have any quantity to sell for forward delivery. In fact, the bulk of the metal held in this market is by the leading consuming interest. Conditions are so mixed in trade that it is idle to speculate on the statistics to come out next week, and some believe that those published last month may have been incorrect. One thing, however, can be stated definitely, and that is that the Steel Corporation is not selling. The London market is off 15s. from last week, closing to-day at £129 10s. for spot and £131 for futures. The arrivals since February 1 have been small, amounting to only 1327 tons, but the afloats continue to increase, now aggregating 4188 tons.

Copper.—A decided drop in prices has brought no business. Quotations are largely nominal. Lake, however, is obtainable at 13c.; Electrolytic at 12.75c., and it is probable that this grade could be had at 12.50c. Casting can be easily had at 12.50c. The London market is £2 lower than last week, closing to-day at £56 7s. 6d., for spot, and £57 2s. 6d., for futures. Electrolytic Copper is being sold in Europe at £60, net. The exports continue extremely disappointing, amounting to only 11,692 tons for the first 23 days this month. The price of Copper is rapidly approaching the low figures of last year and the late part of 1907, when European dealers, consumers and speculators bought so largely and took the surplus off the American market. They show no disposition to purchase now, and doubtless have all they want in a speculative way. American consumers have steadily refused to buy except for their needs, and even now, with these low prices prevailing and funds so easy to obtain, are only buying against orders they have on hand. Stocks continue to pile up, and therefore there is little incentive to buy. It is the opinion of more than one careful Copper buyer that a curtailment of production will again have to be resorted to. Should such curtailment take place it is safe to say that it will be on a more competitive basis than before. In other words, some of the companies outside of the leading producers who so willingly shut down their mines 15 months ago will continue to produce as long as there is a profit in mining and manufacturing Copper.

Lead.—The American Smelting & Refining Company continues to quote shipment Lead in 50-ton lots at 4.10c. Desilverized Lead from outside interests is obtainable at 4c., and Soft Missouri brands at the same figure. In St. Louis the price quoted is 3.85c. The market is extremely quiet.

Spelter.—The market is very dull. The price is a little lower than last week, at 4.90c., New York, and 3.80c., St. Louis.

Antimony.—Prices are lower. Hallett's can be had at 7.75c., Cookson's at 8c., and brands less well known at 7.50c.

Tin Plate.—No quotations are available on Tin Plate. In Swansea Welsh Plates are unchanged from last week at 11s. 9d.

Old Metals.—Business continues very quiet, and, although lower prices have been named on account of the decline in Ingot Copper, there is little buying, except among dealers themselves. The following dealers' selling prices are therefore largely nominal:

	Cents.
Copper, Heavy Cut and Crucible	12.50 to 13.00
Copper, Heavy and Wire	12.00 to 12.50
Copper, Light and Bottoms	11.00 to 11.50
Brass, Heavy	9.00 to 9.25
Brass, Light	7.25 to 7.75
Heavy Machine Composition	11.50 to 12.00
Clean Brass Turnings	8.25 to 8.50
Composition Turnings	10.00 to 10.25
Lead, Heavy	3.75 to 3.80
Lead, Tea	3.50 to 3.55
Zinc Scrap	3.65

New York.

NEW YORK, February 24, 1909.

Pig Iron.—The market is stagnant, and shows increasing signs of weakness, produced largely by the sympathetic effect of the demoralization in the Steel trade. There are a number of inquiries in the market, but they do not seem to be very serious. We quote $17 to $17.50 for No. 1 Northern Foundry, $16.50 to $16.75 for No. 2 Foundry and $16 to $16.50 for No. 2 Plain. Alabama Irons are quoted $17 to $17.25 for No. 1 Foundry, and $16.75 to $17 for No. 2 Foundry.

Steel Rails.—One new inquiry for Heavy Rails has come up in the past week, but there has been no contracting. The rumors of a lower price than $28 are without foundation so far as can be ascertained, and the situation has apparently been unchanged by the developments regarding prices in some other lines.

Structural Material.—The market for plain material has shown but little activity in the past four or five days. As against 1.56c., delivered at tidewater points, on carload lots for immediate shipment, quoted just after the announcement of an open market, the quotation is now 1.46c., and this is minimum as far as can be learned. At least, it is known that offers of business at lower prices have been refused. It is known that some railroad buying, particularly of cars, has been under consideration for some time, and that revised bids are now being sought in the expectation that car companies will revise their prices in view of cheaper Steel. The fact that some fabricating contracts are being placed indicates that recent bids have been based in certain cases on prices for Steel fully as low as anything that has been openly quoted thus far. In New York City the building projects that will be proceeded with this spring represent a considerable tonnage, and the outlook for business of this character is spoken of hopefully. The general contract for the new theatre and office building on the northeast corner of Forty-seventh street and Seventh avenue, requiring 1000 tons of Shapes, has been let to the Thompson-Starrett Company. An apartment house at 110th street and Amsterdam avenue, 600 tons, has been taken by the Baltimore Bridge Company. The Atlantic Coast Line has placed bridge work calling for 3000 tons of Steel, but the name of the successful bidder is withheld. The 1500-ton building of the John Hancock Life Insurance Company, Boston, has been awarded to the New England Construction Company. Bethlehem Shapes are specified for the 3000-ton building of the Trustee Investment Company, Portland, Ore., which will be fabricated by the Minneapolis Steel & Machinery Company, Minneapolis, Minn. We quote plain material, tidewater delivery, on shipments from mill, as follows: Beams, Channels, Angles and Zees, 1.46c.; Tees, 1.51c. On Beams, 18 to 24 in., and Angles, over 6 in., the extra is 0.10c. Structural Material, cut to lengths, is sold in small lots at 2c. to 2¼c.

Ferroalloys.—Several small orders for 50 per cent. Ferrosilicon were placed early in the week at about $62, Pittsburgh. The market, however, is now extremely unsettled, and it is probable that it could be had cheaper, although no sales have been reported. That sold earlier in the week was for spot delivery, and, although some inquiries developed later, these were not turned into orders. Ferromanganese is quiet, with nominal prices of $42 to $43, Baltimore.

Bars.—As Steel Bars have been quoted as low as 1.20c., Pittsburgh, which is equivalent to 1.36c., tidewater, manufacturers of Iron Bars have been compelled to reduce their prices to meet this competition, and their quotations now range from 1.35c. to 1.45c., tidewater. As far as can be ascertained, the revised prices have not induced much business.

Plates.—Consumers are not yet in position to purchase to any extent at the lower prices now being made. The consumption of Plates in this vicinity is fully as light as it has been.

Cast Iron Pipe.—About the only letting of importance in this vicinity in the immediate future is advertised at Newark, N. J., for February 25, when the Board of Street and Water Commissioners will purchase 755 net tons of 6 to 8 in., 779 tons of 10 to 16 in., and 405 tons of 20 to 24 in., together with about 62 tons of specials. The general demand has been cut down considerably and only small lots are now being ordered which are frequently less than carloads. Considerable business is, however, taking shape. It is understood that within a short time the city of New York will advertise for bids for the extension of its high pressure system in Manhattan covering the East Side of the city, for which about 30,000 tons of Pipe will be required. Carload lots of 6-in. are nominal at $24 per net ton, tidewater.

Old Material.—The Scrap trade has been completely demoralized by the action of the Steel manufacturers in declaring an open market on their products. An unfortunate development of this condition of affairs is the cancellation of contracts by numerous consumers. Not only is new buying practically suspended, but dealers are being compelled to dispose of Old Material at a sacrifice, for which they believed they had a sure destination. Under the circumstances prices are exceedingly difficult to quote. Old Car Wheels are now about the best item in the list, being in demand for export, which serves to sustain them in this time of depression. Prices are nominally as follows, New York and vicinity, per gross ton:

Old Girder and T Rails for melting	$11.50 to $12.00
Heavy Melting Steel Scrap	11.50 to 12.00
Relaying Rails	20.50 to 21.50
Old Iron Rails	15.50 to 16.00
Standard Hammered Iron Car Axles	16.50 to 17.00
Old Steel Car Axles	15.50 to 16.00
No. 1 Railroad Wrought	14.00 to 14.50
Iron Track Scrap	12.00 to 12.50
No. 1 Yard Wrought, long	13.50 to 14.00
No. 1 Yard Wrought, short	11.50 to 12.00
Light Iron	6.50 to 7.00
Cast Borings	6.00 to 6.50
Wrought Turnings	6.50 to 7.00
Wrought Pipe	9.00 to 9.50
Old Car Wheels	14.00 to 14.50
No. 1 Heavy Cast, broken up	12.00 to 12.50
Stove Plate	10.00 to 10.50
Locomotive Grate Bars	10.00 to 10.50
Malleable Cast	12.00 to 12.50

Iron and Industrial Stocks.

NEW YORK, February 24, 1909.

The iron and steel stocks were heavily affected by the declaration of an open market on steel products. A special influence bearing on the railroad equipment stocks was the unfavorable report for the past year issued by the Pressed Steel Car Company. All stocks have consequently sold during the week at much lower rates than those prevailing last Wednesday. The range of prices from last Thursday to Tuesday of this week was as follows:

Allis-Chalm., com.	13 - 14¾	Railway Spr., com.	40 - 46½
Allis-Chalm., pref.	39 - 47⅝	Railway Spr., pref.	99 - 101
Beth. Steel, com.	20¾ - 23½	Republic, com.	16⅝ - 23¾
Beth. Steel, pref.	48 - 52	Republic, pref.	67¼ - 85
Can, com.	7½ - 8¼	Sloss, com.	68 - 77¾
Can, pref.	71½ - 75⅞	Sloss, pref.	107⅝
Car & Fdry, com.	44½ - 50¾	Cast Ir. Pipe, com.	25 - 27½
Car & Fdry, pref.	107½-110¾	Pipe, pref.	73 - 75½
Steel Foundries	36 - 36½	U. S. Steel, com.	41¼ - 51¾
Colorado Fuel	29 - 39⅝	U. S. Steel, pref.	107 -113½
General Electric	150½-156¼	Westinghouse Elec.	75 - 82¼
Gr. N. ore cert.	65¼ - 71	Chi. Pneu. Tool	25
Int. Harv., com.	64 - 65	Cambria Steel	32⅞ - 37½
Int. Harv., pref.	110⅝-111¾	Lake Sup. Corp.	17⅜ - 19⅝
Locomotive, com.	49 - 56	Penna. Steel, pref.	103½-104
Locomotive, pref.	111 -112½	Warwick	7½ - 8⅛
Nat. En. & St., com.	12¾ - 13½	Crucible St., com.	6½ - 7⅞
Nat. En. & St., pref.	81	Crucible St., pref.	52 - 63⅝
Pressed Steel, com.	30½ - 40	Harb.-Walk., pref.	82 - 83
Pressed Steel, pref.	98 -101		

Last transactions up to 1.30 p.m. to-day are reported at the following prices: United States Steel common 43⅝, preferred 108⅛, bonds 102⅝; Car & Foundry common 46¼, preferred 107⅝; Locomotive common 50⅛, preferred 109¼; Colorado Fuel 30⅝; Pressed Steel common 32, preferred 98; Railway Spring common 41; Republic common 17¾, preferred 69½; Sloss-Sheffield common 69⅞; Cast Iron Pipe common 24⅜, preferred 73; Can common 7¾, preferred 72¼.

Dividends.—The International Silver Company has declared a quarterly dividend of 1¼ per cent. on the preferred stock, payable April 1.

The Erie & Western Transportation Company (Anchor Line), J. C. Evans, manager, 72 Water street, Buffalo, N. Y., has awarded a contract to the Detroit Shipbuilding Company, Detroit, Mich., for the construction of a 5000-ton steel package freight steamer. The new boat is to be 550 ft. keel, 572 ft. over all, 46 ft. beam and 30 ft. depth of hold, and will be equipped with quadruple expansion engines.

The Inland Steel Company's Annual Report.

The Inland Steel Company, Chicago, a block of whose first mortgage bonds is being offered by Eversz & Co. of Chicago, has made for the fiscal year ending June 30, 1908, a report, signed by President A. W. Thompson, under date of July 27, 1908, from which the following excerpts are taken:

General Results.

The net profits show over 12 per cent. earned on the outstanding capital stock over all fixed charges, bond interest, reserves for exhaustion of ore mines, relining furnaces, accident insurance, &c. While the production shows an increase of 10,561 tons over the previous year, very little of the extensive improvements have added as yet to the enlarged capacity of the plants. In making comparison with the year 1906-07, there was a decrease of profit of $332,480. The financial disturbances commencing early in October, 1907, account for this.

Additions.

The blast furnace blown in August 31, 1907, has been in continuous successful operation, and since the first of the present year the decrease in the cost of manufacturing pig iron aided materially in keeping the steel works in operation.

The other important improvements—sheet bar mill, which will supply material for the sheet department, and continuous rolling mill for merchant bars—were both tried out before our annual shutdown, July 3. The initial operations were very satisfactory, and we look confidently for gratifying results during the coming year.

The steel plant was closed July 3 for the installation of the new blooming mill, which will be in operation August 1. The changes in the open hearth department to take care of hot metal direct from the blast furnace will also be in operation at the same time.

With these new improvements the plant will be rounded up as originally laid out by the directors, giving an increased tonnage of over 50 per cent. in the steel making department. Hot metal from the blast furnace department will be transferred to the open hearth department, insuring a substantial saving in the cost of manufacture.

Finances.

The expenditures for new construction July 1, 1906, to July 1, 1908, aggregated $3,473,034, as follows:

Blast furnace site, real estate, docks, unloading machinery, &c., at Indiana Harbor	$1,806,387
Enlarging open hearth steel plant, sheet and continuous bar mill, &c.	1,666,647

To provide additional working capital the directors thought best to refund the 5 per cent. mortgage, $2,500,000 outstanding at last report, into $3,000,000 first mortgage refunding 6 per cent. bonds. This has been done and all of the 5 per cent. bonds have been canceled, and the mortgage that secured them satisfied. By the terms of the new mortgage the cash and quick assets must not be less than $1,500,000 until the issue is reduced to $1,500,000, and thereafter never less than the amount of the issue outstanding.

From the balance sheet herewith, the net quick assets or cash working capital are shown to be $1,807,207. The inventories are at cost price, and considerably less than market prices. The deferred charges, including all expenses of bond issue, as well as all other doubtful assets, have been written off and charged to "profit and loss."

Earnings for Year Ending June 30, 1908.

Sales ($6,354,436.07), less discount and exchange ($36,937)		$6,317,499
Cost of sales		5,575,169
Gross earnings from operations		$742,330
Other income—Rentals and miscellaneous credits		12,493
Total earnings and income from all sources		$754,823
Deduct—Interest ($39,909); bond interest ($63,072)		102,981
Net income for the year		$651,842

Balance Sheet June 30, 1908.

Assets.

Plant, &c., July 1, 1907	$4,620,291	
Net additions since	1,930,729	
		$6,551,020
Mine leasehold	$722,569	
Less amortization fund	61,514	
		661,055
Finished product, raw material and supplies		1,158,821
Customers' accounts (after deducting reserves)		793,665
Bills receivable		67,034
Inland Coal & Washing Company		11,658
Miscellaneous		28,982
Cash		286,476
Insurance unexpired, &c.		12,459
Total		$9,571,171

Liabilities.

Capital stock	$6,000,000	
Issued	5,160,000	
Less employees' subscriptions payable out of future dividends	59,875	
		$5,100,125
First refunding mortgage 6 per cent. bonds	$3,000,000	
In treasury	103,000	
		2,897,000
Trade acceptances		40,445
Accounts payable		391,264
Unpaid and unclaimed wages		75,325
Taxes, &c., accrued		21,643
Miscellaneous		10,751
Bond interest accrued		43,455
Reserves for relining furnace, &c		23,005
Surplus July 1, 1908		968,156
Total		$9,571,171

All of the new construction and improvements are completed and no further expenditures of any consequence are at present contemplated. With a well rounded plant, with additional steel capacity and a much larger diversity of products than heretofore, with a fair volume of tonnage booked, and increasing business, the ensuing year's results should be encouraging.

The Bessemer Gas Engine Company, Grove City, Pa., states that its business in 1908 showed an actual increase over 1907 of 18 per cent., and at present all of its departments are in full operation on orders for gas engines, air and gas producers, &c. The company operates its own brass and iron foundries which enables it to control the grades of materials entering into its products. It has recently received duplicate orders for gas engines and other equipment from customers. Some extensive plant improvements and additions have been made in the last two or three years, and the company contemplates installing some additional machine tools for which it will shortly place contracts. It has the necessary floor space to accommodate these tools, which will include among others a large boring mill, planer and drill press.

On behalf of autogenous welding interests in Great Britain, issue is taken in the London *Times Engineering Supplement* with the statement previously printed that the welding of mild steel or iron results in a crystalline fracture. The writer tells of recent tests in one of which a welded piece of corrugated furnace was subjected to very severe bending tests. "The plate was about ⅝ in. thick and was cold bent to a radius of ¾ in. without any signs of fracture in the weld, which was made by the oxy-acetylene blowpipe. On closing the bend further a fracture was obtained showing not a coarse but a fine silky structure throughout, except at a distance of about 1-32 in. from the inside of the bend, where the greatest amount of work had been put upon the material."

A preliminary sketch of the Thirty-fifth street viaduct has been submitted to the Milwaukee Common Council by the city engineer. This structure will have a length approximating 3500 ft., making it the longest in the city, and will cost about $450,000. Actual construction work is some time distant.

The Indiana Steel Company's rail mill at Gary, Ind., which began rolling on orders last week, is operating at small but steadily growing capacity. It is at present working only single turn. Seven open hearth furnaces have been fired and are producing steel.

The Cement Industry in 1908.

An estimate by Edwin C. Eckel of the United States Geological Survey indicates that the production of Portland cement in the United States was somewhat less than 40,000,000 barrels. This compares as follows with the output of recent years:

	Barrels.
1905	35,246,812
1906	46,463,424
1907	48,785,390

The falling off from the output of 1907 was heavy, and is particularly notable because it is the first decrease shown in any year by the American cement industry. The decrease was not uniformly distributed throughout the country, for New York, Pennsylvania, and New Jersey will probably show the highest percentages of loss, while in some portions of the West and Middle West the decrease was relatively slight.

During the year several small companies went into the hands of receivers, and the financial stress also led to a change of control in a group of plants operating chiefly in the Pacific States. A fortunate effect of the depression was that it put a stop, temporarily, to the flotation of fraudulent or doubtful cement securities; though it is likely that with improvement in general business conditions promotion schemes will again be taken up on an even larger scale than before the depression.

The year 1909 opens with heavy stocks of cement on hand at most mills, but with good prospects for a steady though slow revival in the cement trade. It is unlikely that this revival will be sufficiently rapid to push mills to their capacity during the year, and it is, therefore, possible that the high record for output made in 1907 will remain unbroken for another year at least. The total maximum capacity of existing plants is now about 60,000,000 barrels a year.

Customs Decisions.

Engravers' Steel Plates

The Treasury Department announces that the Government has decided to accept the recent decision of the United States Circuit Court of Appeals involving the classification of steel plates intended to be engraved. This issue has been in litigation for several years, the last decision favoring W. B. Sellers, the importer in the test case. It was the contention of the Government that the plates in question should be classified as metal articles not specially provided for, with a duty of 45 per cent. The importer claimed duty as "plates in all forms not specially provided for." Under this classifications the goods pay 4 7-10 cents per pound, with an additional duty of 1 cent a pound on account of polishing. It is stated that a large number of other importers' protests raising the same contention as the test issue will now be taken from the suspended files of the Board of General Appraisers, where they have been held up pending ultimate settlement. Heavy refunds of duties will have to be made.

Small Pocket Knives.

In affirming a decision of the Board of General Appraisers, Judge Holt in the United States Circuit Court holds that small pocket knives cannot be regarded for purposes of customs classifications as "toys." It was the contention of A. Kastor & Bros., New York, that the collector erred in assessing the articles under the provision for pen or pocket knives, with a duty of 40 per cent. Instead, the importers maintained that the knives should be deemed "toys," and pay duty at 35 per cent. Judge Holt says the articles might more properly be assessed at 45 per cent. as manufactures of metal, but as that question is not before the court, he upholds the collector's assessment under the knife schedule.

The plant of the Franklin Rolling Mill & Foundry Company, Franklin, Pa., was sold at receiver's sale last week for the purpose of reorganization of the company, which in the future will be known as the Franklin Steel Company. It was sold to President Leigh of the Chicago Railway Equipment Company for $64,000, which is said to be sufficient to cover outstanding indebtedness.

Unctuous Acheson-Graphite.

It is well known that when used as a lubricant graphite should be of such quality as to give a smooth veneer or coating to the parts to be lubricated. One of the most essential qualities is purity, for where an impure graphite is used as a lubricant it carries into the machinery dangerous friction-creating materials, the impurities of natural graphite being talc, mica, clay and sand.

To be a first-class lubricant a graphite should be amorphous, very fine, soft and unctuous. It should not have brightness or luster, as brilliancy in graphite denotes ability to reflect light, and a graphite that reflects light indicates that its particles are of some measurable size and of a compact, homogeneous nature, a condition in sharp contrast to the fine, soft, unctuous qualities that assure the graphite of possessing superior merit as a lubricant. Brightness or blackness in graphite is no indication of its purity or value.

The International Acheson Graphite Company, Niagara Falls, N. Y., is the only maker of graphite in the world. It operates the electric furnace process, and thus the company is in full control of every ounce of raw material that enters its furnaces, while it also controls the application of the furnaces during the entire period of their operation. Because of these facts and the thorough scientific skill applied, this company makes what it calls grade 1340, Acheson-Graphite, guaranteed to be at least 99 per cent. pure, very fine, soft and unctuous. It is not tough, but has the spreading qualities so necessary to ideal lubrication.

The Pennsylvania Tax Situation.

From the present outlook the Pennsylvania Legislature will not pass much revenue raising legislation, and it is now freely predicted that the proposed tax on the capital stock of manufacturing corporations, now exempt, will fail. A number of similar measures have been proposed, but the general belief is that the Legislature will enact only such statutes as are required. It is now calculated to get along with the $42,000,000 annual revenue in sight from present laws.

Two important bills appeared last week. One provides for a whole new code of laws for the government of soft coal mines, increasing the number of inspection districts from 20 to 22 and requiring elaborate safeguards for all mines in the way of gas control, electric apparatus and wires and the wetting of dust. Considerable opposition is being manifested to the proposed law by operators because of the heavy expense to which they would be put by the adoption of such provisions, and the miners are not satisfied with other requirements. The other bill codifies the child labor laws of the State, making 14 years the limit, and prescribing that no one under 18 shall be employed about any blast furnace, iron mill, electric plant, tannery, dock,, quarry, dynamite factory or similar hazardous place. The minimum in the mine bill is also 14 years.

The Pittsburgh Gage & Supply Company, Pittsburgh, has received a contract for the oiling system in the power plant of the Indiana Steel Company, Gary, Ind. It consists of two White Star oil filters, guaranteed to filter not less than 6700 gal. of oil per hour, being the largest units ever installed. Other orders being filled are for the National Tube Company, McKeesport, Pa.; Toledo Furnace Company, Toledo, Ohio, and the Packard Motor Car Company, Detroit, Mich.

The Standard Engineering Company, Ellwood City, Pa., manufacturer of pipe threading and tube bending machines, is finding an excellent market for its products in the California oil fields. It has recently made large shipments of pipe machines, including medium sizes and up to 18 in., both of standard mill and Wieland types. C. F. Wieland, formerly located at headquarters, is now representing the company on the Pacific Coast, being located at San Francisco.

The Machinery Trade.

NEW YORK, February 24, 1909.

Merchants are much interested in the cuts in prices of steel and are speculating as to the probable effect the reductions will have on the demand for machinery in the immediate future. In this there is a wide difference of opinion, some declaring that for the time business will be more unsettled, while others claim that trade will be stimulated. Among the latter are many who have been in favor of a reduction in prices since the depression, claiming that such a course would induce those who had in view the erection of new buildings to proceed with the work and thus start projects that would benefit other branches of manufacture. The result of this movement in machinery lines, the price of the raw material being such a small part of the cost of building a tool, will be awaited with considerable interest. Several instances have been noted the past few months where dealers could have secured fair sized orders at reductions, but they were turned down by the builders. With the holiday intervening not much additional business was expected the past week, and merchants were not disappointed by the absence of large inquiries. While the actual transactions were not numerous and covered generally single tools, a slight increase in the number of inquiries received was noted.

Power equipment people continue to get a fair amount of business from export sources and recently some rather good orders have been placed for power machinery for mining properties in Mexico, South America and Central America. Mining machinery men have shared in this business for a scattered line of equipment. The Japanese have about completed buying for the conversion of the Imperial Railroads to electric power at congested points as far as they have planned, but it is understood that more work of the kind will be done in Japan. Some fairly good railroad business has been placed of late in the way of construction equipment by interests in Argentina, and the Japanese have been buying general machinery for flour milling enterprises.

The Milled Screw & Machine Company, Sayre, Pa., is being organized by parties connected with the Cayuta Mfg. Company and the Sayre Stamping Company of that city to manufacture a new thread milling machine, the invention of James Bowen, and lead screws or other screws requiring extreme accuracy. In this machine the cutter is mounted in a swivel head, and the blanks to be headed are secured in a chuck at the end of a large lead screw mounted directly over the bed of the machine. The lead screw is driven by two worms, the worm gears producing a longitudinal and circular motion through a split nut. Threads of a different pitch may be cut by a simple combination of change of gears. In other thread milling machines the cutter is mounted on a carriage and traverses the bed. In this machine the cutter remains in a fixed position and the work is fed by the cutter. The entire mechanism is said to be so simple and there are so few parts subject to wear that accurate screws, it is claimed, can be continuously cut by an inexperienced man. One man can operate as many machines as he can change the stock for. The company will occupy an existing plant, for which the equipment has been secured. It expects to be ready for operation about April 1. The mechanical department will be under the direction of James Bowen and C. E. Loetzer, both of whom have had a wide experience in the manufacture and design of the machine tool. W. T. Goodnow is president; C. C. West, treasurer, and L. E. Kinsman, secretary.

The Cotton Growers' Industrial Company, New Decatur, Ala., has not yet decided upon the machinery it intends to buy to equip its new plant. It is the intention to equip the machines with individual motor drives, producing its own power from an electric plant. The new plant will be erected at a cost of $35,000 and will include a main building, 60 x 180 ft.; foundry, 40 x 90 ft.; engine and boiler house, 30 x 60 ft.; paint, drying and storage house, 36 x 72 ft., and office building, 44 x 44 ft. The equipment for the buildings, which will be of concrete and brick construction, will cost about $25,000.

The Clayco Iron Works, Petrolia, Texas, will increase the capacity of its plant and is in the market for a lathe, steam hammer, milling machine, boring machine and other equipment.

In rebuilding its plant at Milwaukee, Wis., which was recently destroyed by fire, the H. W. Johns-Manville Company's plans will call for about 750 hp. of power equipment, all machines to be operated by motors; four or five elevators, belting, shafting, &c. The plant will be equipped with special machines of the company's own design for the special work done in that factory. The headquarters are in New York.

The inquiries now in the market from the North Jersey Construction Company for two 500-kw. generators with cross compound condensing engines and four 250-hp. water tube boilers indicate that the interests behind that company intend to go ahead with the long delayed project to build a high speed electric line from Paterson to Hoboken, N. J., to connect with the McAdoo tunnels. The North Jersey Construction Company, it is understood, controls the company which has been formed to build a trolley line from Suffern, N. Y., to Paterson, N. J., as well as the New York & New Jersey Rapid Transit Company, which is to build the high speed line. It is understood that work on the Suffern-Paterson division, which will be 15 miles long, is to be begun shortly, and the inquiries now in the market are for a temporary plant to furnish power for the operation. There has been talk of a large power house on the Hackensack meadows, but as yet no plans have been drawn for this plant, although it is understood that the company is planning to build a large power plant somewhere along its lines, and perhaps car shops. William Barbour is president, and M. R. McAdoo, a brother of W. G. McAdoo, is vice-president and general manager.

Plans have been completed and bids will be received until March 10, at the Chamber of Commerce Rooms, Syracuse, N. Y., by Charles Snow, secretary the Onondaga Hotel Company, for the construction of the new hotel building as per plans and specifications by Architects Essenwein & Johnson, Buffalo, N. Y. The building is to be 11 stories, 132 x 159 ft., with a basement and sub-basement, of steel frame construction, including about 1400 tons of steel work. The sub-basement of the building is to be equipped with a modern power plant for lighting, elevators, &c. A separate bid is being received on the equipment for the plant, which includes three 72 in. by 18 ft. horizontal tubular boilers, 150 hp. each, with underfeed stoker equipment; two 7½ x 6 x 10 in. duplex steam pumps for boiler feed, one 140-in. steel plate blower with 15-hp. motor, two 180-in. horizontal steel plate blowers with 20-hp. motor, one 60-in. disk fan with 5-hp. motor, one 10-hp. vacuum cleaning machine, one ice making machine, one 600-hp. feed water heater, three 100-kw. direct connected generating sets, 125-150 volt; three 150-hp. horizontal automatic cut-off engines to drive generators.

Business Changes.

A selling company has been organized under the name of the J. Rogers Flannery Company, with headquarters at Pittsburgh, Pa., to take over the sale of the Tate flexible staybolt and the Keystone nut lock, manufactured by the Flannery Bolt Company. The representatives of the new company will be H. A. Pike, New York; W. M. Wilson, Chicago, Ill.; Grundy & Leahey, Richmond, Va.; Tom R. Davis, mechanical expert, Pittsburgh, Pa.

The Franklin Moore Company, Winsted, Conn., has opened a sales office at 136 Liberty street, New York, which is under the management of A. H. Briggs. In the new branch the company will carry a complete stock of traveling cranes, trolleys and Acme chain hoists, also its new Imperial chain hoists, which it is now placing on the market.

Cleveland Machinery Market.

CLEVELAND, OHIO, February 23, 1909.

The condition of the local machinery market remains about stationary. A few machinery houses report a little more activity during the past week, but with others business was not as good as during the previous week. No new inquiries of any size developed. Orders received during the week were nearly all for small single tools. A large share of the inquiries are for second-hand tools, for which the demand is fairly good. The available supply of used tools is somewhat limited. The demand for machine tools at present comes largely from garages, small tools being needed for automobile repair work. Machinery houses are also getting some orders from makers of automobile parts. Plants making automobile parts as a rule have all the work they can do at present and are running at full capacity.

Builders of the most of the standard lines of machine tools do not expect that the cut in prices on finished lines will help very much to improve their business, but it is believed that the makers of punches, shears and pneumatic tools will be benefited somewhat. Builders of heavy handling machinery are looking for a better demand for their products as a result of the activity that they believe will be stimulated by lower prices for finished lines. Inquiries for heavy machinery have improved somewhat and the outlook, regardless of the effect the open market in finished lines may have, is regarded as more favorable. The demand for industrial cars and locomotives shows an improvement, but builders complain that competition is forcing them to quote very low prices.

Encouraging reports regarding the business outlook for the year were made at the annual meeting of the Wellman-Seaver-Morgan Company, Cleveland, that was held February 16. The president's report of business for the past year

was very satisfactory, considering conditions during the year, and the company starts the new year with 25 per cent. more work on hand than a year ago. The company has recently received the contract for eight large cranes, four beam cranes and four chamber cranes for handling concrete in building the Panama Canal locks, also a contract for a double conical electric hoist for the Penn ore mines of the Cambria Steel Company at Vulcan, Mich.

The Atlas Car & Mfg. Company, Cleveland, reports an improvement in orders for industrial cars and locomotives, and its plant is now running at full capacity on industrial railroad work for Panama and other orders that have been taken more recently. During the past few days the company has taken orders for three electric storage battery locomotives, each with a number of special cars, for industrial plants, and also for a number of electrical transfer cars. Other recent orders were for 50 special gable bottom cars, equipped with manganese steel wheels and the company's self-oiling sleeves, for underground mining work. Last week 30 cars were shipped to a mining company in Mexico.

The Taplin-Rice-Clerkin Company, Akron, Ohio, has just received a $40,000 contract from the Republic Rubber Works, Youngstown, Ohio, for cores, molds and equipment that will increase the capacity of the plant from 500 to 1000 tires per day. The Taplin-Rice-Clerkin Company has also recently secured a contract for the machinery equipment for a new two-press sewer pipe factory that is being built by the Pomona Terra Cotta Company, Pomona, N. C.

The Akron Automatic Hot Water Heater Company, Akron, Ohio, has been incorporated, with a capitalization of $10,000, to manufacture and place on the market a new hot water heater. The incorporators are Charles A. Ley, James W. Meeker, W. W. McIntosh, Lester A. Teits and J. L. Reid. The company expects to establish a plant soon.

The Berger Mfg. Company, Canton, Ohio, sheet metal worker, reports an improvement in business. The company has a large volume of orders on hand and is running its plant at full capacity.

The Canton Art Metal Company, Canton, Ohio, reports that orders are improving and that its plant is being run at full capacity.

The Motor Mfg. Company, Geneva, N. Y., is looking for a new location for its plant in Canton or Akron, Ohio, desiring a new site with the view of increasing its capitalization and output.

The Wise Furnace Company, Akron, Ohio, has increased its capitalization from $50,000 to $150,000.

Bids will be received until March 18, at the treasurer's office of the Central Branch of the National Home for Disabled Volunteer Soldiers, National Military Home, Ohio, for two 350-hp. water tube boilers to be equipped with automatic stokers, two feed water heaters and accessories.

Cincinnati Machinery Market.

CINCINNATI, OHIO, February 23, 1909.

Machinery and machine tool builders in this section, while noting a scarcely perceptible improvement in inquiry from the corporations and large concerns, feel somewhat encouraged over reports from the dealers. These selling concerns are having some increased inquiry for standard tools, and sales of single tools here and there are more frequent.

Within a short time new price-lists showing an advance will be issued to the dealers and the trade by manufacturers of two or three standard tools. In one case, that of a standard tool on which some notable improvements have been made, the experimenting and testing, &c., covering a period of a year or more, the new price became effective February 22. As a rule tool builders in this vicinity anticipate little or no effect on their business because of the reduction in prices of steel. One of the largest manufacturers in this line, in discussing the subject, said: "I can see no possible good in the announced price cutting, under the present conditions of trade. People don't buy iron and steel like small articles are bought. The better class of manufacturers and railroad officials are becoming educated to the advantages of the specially high grade tool, and when he wants it he will pay the market price for it. If he doesn't want or need it, the cutting of the price $10 or $15 is not going to sell it to him."

One of the most interesting events of the week locally was the visit here of Fred W. Taylor of Philadelphia, former president of the American Society of Mechanical Engineers. The day of his visit he was taken through the various large tool making shops, inspecting the late modern improvements, and in the evening had about 200 shop foremen and superintendents as auditors at the Business Men's Club. It was an interesting talk from the viewpoint of the technical men present. The subject matter was entirely technical in character, such as the speeding of machines, scientific and accurate handling of tools to produce the best results, and the introduction of testimony to prove the efficacy of the task system as against the initiative and incentive method so popular in machine shops.

The organization of the Cincinnati Bickford Tool Company, which was announced in last week's *Iron Age*, is now complete and is as follows: President, August H. Tuechter; vice-president and general manager, Sherman C. Schauer; secretary, W. H. Shafer; treasurer, George P. Gradolf, and H. M. Norris, engineer. The president, vice-president and secretary come from the Cincinnati Machine Tool Company. Mr. Gradolf is cashier and officeman at the plant of the Bickford Drill & Tool Company and Mr. Norris is the present manager of the Bickford works. A full line of drilling machinery of every description will be manufactured. Eventually the new company will have an entirely new plant in the Oakley colony.

The Columbus Structural Steel Company of Columbus, Ohio, has finished a series of handsome arches and placed them on prominent streets of Manchester, N. H. The company is working up a nice business in this comparatively new line of structural work.

A new Toledo, Ohio, concern is the Winslow Mfg. Company, which was organized to manufacture the invention of John M. Winslow of Cleveland, an unbeatable voting machine. The incorporators are Howard Lewis, C. T. Lewis, Chas. B. Wingerton, F. J. Holzemer and Frank T. Lewis. The company has located most of its machinery in the Pray Building, on Madison avenue, and is about ready to commence manufacturing the machine.

The receivership of the Marvin Machine Works at Findlay, Ohio, has been terminated through the purchase by George W. Rogers of the grounds, building and machinery. The property was rented to Frank Marvin for a period of five years, who, it is understood, will put it in operation soon.

Capital is being interested in the invention of H. W. McNaught, Brightwood, Ind., of an electric device operated by power separate from that operating the car of elevators to prevent accidents. It is so arranged that the elevator door cannot be opened while the car is in motion, nor can the car be operated while the door is open. A small device locks the controlling lever of the elevator and another operates the door lock. Mr. McNaught, together with Samuel Glick of Indianapolis, will head the company.

In view of the recommendation of the Indiana House Committee on Agriculture recently, favoring the passage of a bill appropriating $160,000 for a machinery hall to be located in the State Fair grounds, machinery and machine tool interests are becoming interested and promise to take a prominent part in future fairs. The West Side Board of Trade of Columbus, Ohio, is trying to secure the location of the proposed machinery hall for that city.

Milwaukee Machinery Market.

MILWAUKEE, WIS., February 23, 1909.

The closing week of February shows an apparent loss over the corresponding period last month, so far as the number of men employed in the various shops is concerned, but reports made by members of the Milwaukee Metal Trades & Founders Association indicate that a further improvement is to be looked for in the near future, and private advices continue encouraging, as outlined last week. Out in the State renewed activity is even more marked. A representative of Fairbanks, Morse & Co., whose factory is at Beloit, refers to the opening weeks of the new year as being among the best they have ever had in this territory, and others similarly situated are, with relatively few exceptions, quite optimistic as to the immediate future. One basis of confidence is the quantity of new construction work now being entered upon throughout Wisconsin, and a general movement among the county, town and municipal governments to undertake long contemplated improvements.

The Northwestern Iron Company states that its two furnaces at Mayville, Wis., are in operation. From the Solvay process plant of the Milwaukee Coke & Gas Company 1400 tons of coke per day are being shipped and business is reported to be good.

An active campaign is on here at present for the sale of small motors by the General Electric Company, Crocker-Wheeler Company, Westinghouse Electric & Mfg. Company, Northwestern Mfg. Company, Bullock Electric Mfg. Company, Keelyn Electric Company, Mechanical Appliance Company, Ft. Wayne Electric Company, Sprague Electric Company and others, the two first named being represented by their Chicago agencies. Numerous shops are considering changing over to electric drive, and nearly all plants now projected here are designed for that system, the economy of which has been forcibly illustrated during the recent depression.

The downtown factory and warehouse of the H. W. Johns-Manville Company, which was totally destroyed by fire, will be replaced by a six-story fireproof mill construction building 50 x 150 ft., with a separate office building. Considerable new machinery, including probably an electric power and lighting equipment, will be needed. Architect H. J. Esser, who designed the Public Service Building, is drawing plans for the two buildings.

An event of considerable importance in local industrial

circles is the increase in the capital stock of the Geuder & Paeschke Mfg. Company from $150,000 to $1,000,000, which is fairly representative of the expansion of the business of that company the past few years. F. J. Frey, who has been secretary, acquires a larger financial interest, and the name has been changed to the Geuder, Paeschke & Frey Company. The plant may be enlarged.

The municipal authorities of La Crosse, Wis., are considering the installation of a lighting plant to be operated in connection with the city water works. The Cloos Engineering Company, Milwaukee, is reported to be drawing plans.

A meeting of the representatives of the Cutler-Hammer Mfg. Company from all parts of the country has just been held here. They reported increased activity all along the line.

The Gisholt Machine Company, Madison, is among recent purchasers of Hercules portable crane hoists.

For the new planing mill of the West Allis Lumber Company, to be built this spring, a double surfacer, planer and matcher, molder, ripsaw, resaw and power plant machinery will be needed. F. S. Baldwin is president.

J. Everton & Son, Deer River, Minn., have bought from the Minneapolis Steel & Machinery Company an 80-hp. Muenzel gas engine and producer, to be connected to a 60-kw. direct current generator, for the local lighting plant.

The Wolf River Improvement Company, Appleton, Wis., has been incorporated to conserve the flood waters of the Wolf River and furnish that stream and the Fox River with a normal flow of water the entire year. A service reservoir, covering about 12 sq. miles, will be built by means of dams, and a large hydro-electric power plant will be built.

A large steel and concrete pulp mill will be erected at Little Rapids, near De Pere, Wis., and water power of about 2500 hp. developed for operating the plant. Luther Lindauer of Kaukauna, Wis., is financing the project.

The Chain Belt Company is putting on the market a new type of telescopic elevator used in elevating ashes from power plants in the downtown district and discharging into wagons.

The Allis-Chalmers Company reports more activity in its steam turbine department, contracts having recently been closed for quite a number of units, including generators, transformers, switchboards, &c., to be installed mainly in industrial plants in various parts of the country. Shipments on previous orders are also heavy, as the builders of new or extended power plants are now ready to receive the necessary machinery and place it in operation, whereas they have heretofore delayed giving shipping instructions.

The American Adding Machine Company, Milwaukee, has been incorporated by Frank W. Van Ness, a leading machinery specialist, with Chas. P. Wetmore and L. G. Wheeler.

H. S. Hastings, commissioner of the United Metal Trades Association, has written an interesting letter to local manufacturers, in the course of which he says that "Eastern modern machines and equipment are not used extensively in the manufacturing plants on the Coast," and suggests that suitable exhibits be made, including some machines which can afterward be donated to the University of Washington for its school of engineering; for, when the fair is over, the university will retain such of the buildings as it sees fit to occupy permanently, and any apparatus left with it will constitute a standing exhibit. Mr. Hastings states that the machinery needed by the school comprises a small steel converter, molding machines, rattlers, crucibles, hoists, snap flasks, core machine and oven, lathes, planer, drills, gear cutter, screw machine, horizontal boring drill, combined shears and punch, pipe threader, small crane, pattern making machinery, riveting apparatus, including compressor, and other tools suitable for a modern plant.

Chicago Machinery Market.

CHICAGO, ILL., February 23, 1909.

The principal transaction of the past week was the final closing up of a part of the machine tool requirements of the 'Frisco System for installation in its new shops at Springfield, Mo. It will be remembered that this equipment was under consideration more than a year ago, and after being figured on by the trade was withdrawn. Not all of the tools comprised in the original list have been purchased, the present order amounting to about $25,000, the principal part of which, if not all, was placed with one of the leading Chicago houses through its St. Louis branch.

Just how the recent cut in steel prices will affect the machinery market is a subject that is now being earnestly discussed by all interests. This action of itself should not, it is believed, unsettle machinery values to an appreciable extent, since in a majority of lines the material costs are of secondary importance as compared with the labor spent upon production.

While it is expected that trade will suffer temporarily from the conditions thus created, there is on the other hand a widely entertained belief that the giving way of the artificial props and the sudden drop to the bottom that has come will hasten rather than retard the establishment of normal business upon a stronger and more substantial basis.

Opening of Marshall-Huschart Machinery Company's Demonstration Shop.

An event of unusual interest in machinery circles was the formal opening on Saturday evening, February 20, of the new demonstration shop established in the machine tool warerooms of the Marshall-Huschart Machinery Company, 62 South Canal street, Chicago. For the accommodation of this department a well lighted room 45 x 66 ft., on the second floor of the building has been fitted up and supplied with power for the operation of a number of machine tools. Two parallel overhead motor driven line shafts communicate power to the belt driven machines, while the individual motor driven tools are furnished with convenient connections to the current circuit. Every facility, in fact, is provided for the performance of all practical operations of which the tools are capable.

At the invitation of the company the Superintendents and Foremen's Club of the National Metal Trades Association made this the time and place for holding its regular monthly meeting. Besides the large attendance composed of the membership of this club, of which A. A. Bettridge is president, there were present several representatives of prominent machine tool manufacturing concerns; these with other guests numbering in all 175, filled all available space in the room. The speakers of the evening included S. H. Reck, president of the Rockford Drilling Machine Company, who referred to the multi-spindle or gang drill, with its system of sliding and self-centering jigs, as a necessary outgrowth of the pressing demand for rapid production; E. P. Bullard, Jr., president, Bullard Machine Tool Company, who in a brief sketch outlined the progress that has been made in the development of boring mills in the past decade, pointing out at the same time some of the steps in its accomplishment; J. W. Correl, sales manager, Lodge & Shipley Machine Tool Company, in whose remarks attention was invited to the changes brought about in lathe construction by the use of high speed tool steel as exhibited in one of the Lodge & Shipley heavy duty lathes on the floor before him, and Charles S. Gingrich, who talked of the construction, use and advantage of milling machines. At the close of these exercises Mr. Marshall expressed his pleasure and gratification at the opportunity thus afforded of welcoming as the company's guests a body of men so well qualified by education and training to pass critical judgment upon the mechanical operations that would be later shown. After refreshments had been served the machines were started, and under the guidance of skilled operators they were subjected to tests of the severest character in the various kinds of work they were designed to perform. In the course of the evening some remarkable results in power speed and efficiency were shown, all of which were scrutinized with intelligent interest by the groups of skilled mechanics gathered about the various tools. The tools comprising the installation on the floor of the demonstration room were as follows: Lodge & Shipley patent head screw cutting engine lathe 20 in. by 12 ft.; Economic engine lathe 19 in. by 6 ft., with quick change gear; No. 2 plain cone type Cincinnati horizontal milling machine; No. 3 universal Cincinnati high power milling machine; 24-in. rapid production Bullard vertical turret lathe with rapid traverse; single spindle Allen ball bearing high speed drill; eight-spindle Rockford gang drill; 14-in. Rockford drill, geared drive with geared tapping attachment; 12-in. Rockford motor drive shaper; No. 2 standard Rockford plain radial drill single pulley gear box drive; 20-in. Gould & Eberhardt extension base shaper; heavy pattern Cincinnati upright drill with geared tapping attachment.

R. L. Bixby, City Clerk, Union, Iowa, writes that a stock company has been organized and incorporated to establish a new electric light plant at that place. The new company has elected a board of five directors, who are now ready to meet representatives of manufacturing interests supplying motive power and electric machinery and appliances. The use of gas producer engines is being considered, but no purchases have as yet been made.

The Grand Ledge Gas Company, Grand Ledge, Mich., is contemplating improvements requiring new equipment amounting to about $15,000, which it is expected will be purchased within the next four weeks.

New England Machinery Market.

BOSTON, MASS., February 23, 1909.

The trade is centering its attention on the steel situation, in the attempt to determine what effect the cut in prices will have on the machinery market. The general impression in Boston is that the results will be beneficial. Practically every one expresses this opinion. The steel merchants and the structural fabricators appear to agree that the move is a wise one, though naturally they are not pleased with the prospect of making the resulting sacrifice on steel purchased

at higher figures. But stocks are light, and the loss should not be heavy. It is too soon for the merchants to have felt much direct result from the lowered prices. Steel buyers state that there will be no rush on their part to increase their stocks. At present they are studying the situation keenly, exchanging views among themselves and getting in touch with customers. A considerable share of recent New England business in structural steel has gone to middle Western concerns at figures which the local people could not touch. A normal amount of new steel construction in mercantile buildings is under way or promised, so that the season will not be a poor one, though industrial building will be light.

The new steel prices will have no appreciable effect upon the cost of machinery, and lists will not be disturbed because of them. It looks as if the machine tool market as a whole will maintain its present base, though a certain amount of concession is being made by some manufacturers.

The demand for machine tools remains light. Reports of increased business continue to be received from Chicago dealers who have affiliated interests in Boston, but in New England there is little improvement, and the same word comes from other parts of the country. Pretty much all the business booked the past week was for automobile purposes, principally garages. Nevertheless, there are indications of a gradual strengthening of the market, especially in the kindred lines. The Norton Company, Worcester, Mass., manufacturer of abrasive products, is running full, after a constant improvement dating from January, 1908. Each month of last year was better than that preceding it, until in December the business amounted to 12½ per cent. more than the average month of 1907. The improvement did not stop there, for January's business was better than December's, and February's promises to be better still. The Boston store of the Fairbanks Company booked more orders during the first 15 days of February than for any similar period since 1908 opened, the new business being well distributed through the extended line carried by the house. Another dealer in machine tools and supplies found that business for December and January was 20 per cent. above the average for the previous 12 months, the increase being more marked in the machinery department than in supplies, the significance of the latter comparison being modified by the fact that the falling off in sales has been much greater with machinery.

A meeting of manufacturers of electric switches, which took place in Hartford last week, promises to bring about profitable results in that an end of the price cutting which has been prevalent in the trade has been reached, according to the reports from that city. It is said that some time will elapse before certain of the companies will reap the results of the higher prices which promise to prevail, because they have large volumes of orders on hand, booked at lower figures.

The Boston Elevated Railway Company, which operates the surface, elevated and subway service of systems of Boston, and much of its suburbs is planning to increase its power largely. No details have been determined upon by the company's engineers, though tentative plans have been made. It is given out that some $2,000,000 will be devoted to the new power facilities, for which large amounts of equipment will be required. The full limit of the engines last installed, in 1907, totaling 10,800 hp. has been reached.

Manning, Maxwell & Moore are occupying their new store at Oliver and Franklin streets, Boston. The quarters are attractive, as well as spacious, and show windows on two streets afford ample opportunity for the display of machinery. Frank K. Moore, representing the American Woodworking Machinery Company, has taken a part of the store, and he also will have a better opportunity than before for showing his company's machinery.

A number of the manufacturers of marine combustion engines are having their work done for them on contract. These concerns promise a profitable market for machine tools in the future, as one after another they establish works of their own, which, naturally, would be their ultimate intention. This branch of the engine business continues very good, and the season should be an excellent one, which fact in itself will assist in carrying out these plans.

Bids will soon be asked for the building of the tunnels which will form part of the extension of the Boston Elevated Railway system to the neighboring city of Cambridge. The details of the route have been settled after long discussion and investigation, which includes a tunnel under Beacon Hill, from the Tremont Street Subway at Park square, and an elevated structure over the Cambridge Bridge and thence into the heart of Cambridge. The work will be on a large scale, and will call for the purchase of large quantities of materials, as well as structural steel, rails, &c.

The Webb Granite & Construction Company, Worcester, Mass., has decided to rebuild its plant in that city, recently destroyed by fire, and is already placing contracts for the equipment mentioned in this column a fortnight ago. The Morgan Engineering Company will furnish a 40-ton electric traveling crane. Smaller cranes will be needed, together with the equipment for a small machine shop, and a variety of stone working machinery for handling heavy work.

A dispatch from New Haven, Conn., states that the Demarest Mfg. Company, carriage builder, will abandon its plant in that city and concentrate its business in New York, where the present factory will be enlarged for the purpose.

The old and important business of Smith & Wesson, Springfield, Mass., manufacturer of firearms, has been incorporated as Smith & Wesson, Inc., with a capital of $500,000. Walter H. Wesson is president and treasurer, Joseph H. Wesson, vice-president, and James K. Davidson, assistant treasurer. The Board of Directors consists of Walter H. Wesson, Joseph H. Wesson, Harold Wesson, Harcourt W. Bull, Frank H. Wesson and Douglas B. Wesson. The transfer of property from the firm to the corporation includes the entire real estate holdings and business.

The new electric plant of the Goodell Cutlery Company, Antrim, N. H., referred to last week, developing new water power, will be equipped with two turbine water wheels capable of giving 800 hp. under the 80-ft. head of water, and with a 500-hp. generator. A steel penstock, which will be supplied by the Dalrymple Iron Works, Fair Haven, Vt., will be 1600 ft. long, 7 ft. in diameter for two-thirds of its length and 6½ ft. for the remainder. The current will be conveyed 4 miles to the company's factory. Former Governor D. H. Goodell, head of the business, has been developing the water power of the neighborhood of his works for many years, and was one of the first to convert the energy into electricity for manufacturing purposes.

The Berkshire Cotton Mfg. Company, Adams, Mass., has purchased water rights in that town with the purpose of creating a large reservoir. The new power plant of the Lyman Mills, Holyoke, Mass., will develop 1000 hp. in the beginning.

The office of the Boston Branch, National Metal Trades Association, has been moved from Exchange place to Rooms 309-310, Oliver Building, 141 Milk street.

The Bangs Company, Everett, Mass., manufacturer of druggists' fixtures, whose plant was burned recently, has rented a factory containing 24,000 sq. ft. of manufacturing space at Reading, Mass., for temporary occupancy. It has not been decided whether to rebuild at Everett, but the present inclination is to do so, the company states. A large amount of woodworking and other machinery was destroyed.

The Worcester County Mechanics' Association anticipates a large and representative showing of manufactured products at the Mechanical and Electric Exposition, which will be held in Mechanics' and Washburn halls, from March 27 to April 3, inclusive. Applications for space so far received promise an interesting exhibition. The exposition will be conducted on a co-operative basis, in that all profits, that is to say money received above expenses, will be divided *pro rata* among the exhibitors, the management not desiring to make a profit.

The business of the Massasoit Abrasive Products Company, Chester Mass., manufacturer of grinding wheels, sharpening stones and other abrasive products, has been incorporated as the Massasoit Company, with an increase in capital from $30,000 to $60,000. W. C. Fay is president and manager; E. P. Marsh, treasurer, and S. H. Howland, vice-president.

The main repair shop of the Blue Hill Street Railway Company was destroyed in a fire that burned the central car barn at Canton, Mass., February 21, with a total loss of $150,000. The company will have to replace much of its machinery.

Philadelphia Machinery Market.

PHILADELPHIA, PA., February 23, 1909.

The increased buying which developed during the early portion of the month has simmered down and business the past week has again been rather dull. Irregularity is to be expected under conditions which have recently prevailed, and it is quite probable that we shall have what might be termed an up and down market for some little time. The extremely unsettled condition of the iron and steel trade will no doubt have some influence on the machinery trade, even though indirect, and prospective buyers are apt to hold off for a time. The trade, however, is not discouraged by conditions, believing that buying will simply be deferred and will develop more activity before a great while. In fact, several propositions covering moderate equipment are being considered which will hardly be definitely decided upon for several months, particularly as the improvements to the plants for which they are intended have not yet been actually started.

Sales have been confined to small tools, the bulk of the business being of a single tool character, which in the aggregate has been smaller in volume than for several weeks. Inquiries have been smaller in number, but some few have been of increased size. Manufacturers report absolutely no change in conditions, and no gains have been made in productive capacity; in fact, a good share of the current busi-

ness has been of the nature that enabled shipments to be made direct from stock.

The foreign demand is quite inactive. Power transmission equipment specialties report a fair number of export orders but the individual size continues rather small.

Second-hand machinery merchants report little betterment in conditions. The demand is irregular, and sales are mainly of the smaller wood and metal working tools. Second-hand boilers and engines, particularly of medium horse powers, are in a shade better demand, and builders of new equipment of this class are figuring on a fairly good quantity of work, but orders develop somewhat slowly.

The foundry trade continues on a fairly even basis. New business, however, comes out slowly, particularly heavy contract work.

The Ansley H. Fox Gun Company, Eighteenth and Windrim streets, Philadelphia, contemplates extensions to its present buildings so as to enable it to take care of about 60 per cent. additional business. Considerable new machinery will be required which has not yet been fully decided upon.

The Borough Council of North Arlington, N. J., will receive proposals until March 3 for some 46,000 ft. of cast iron pipe of various sizes, 44 valves, two intake meters and other supplies. Specifications and blank forms may be obtained from Wise & Watson, engineers, Rutherford, N. J., or from the Borough Clerk, North Arlington, N. J.

The American Pulley Company reports business on about an even basis. Orders are still moderate, although a better disposition to make purchases appears to be developing. The foreign demand is dull and has not responded as rapidly as has the domestic. While business is expected to improve in the near future, no rush is looked for under present market conditions.

Plans are being prepared by Wm. Steele & Sons Company, engineer, for a five-story concrete addition, 90 x 120 ft.; a one-story concrete addition 40 x 60 ft., and a new boiler house for the factory of the James Campbell Company, Camden, N. J.

The contract for the construction of the high pressure fire main service, designed for the northeastern section of this city, has been awarded by the Department of Public Safety to the Millard Construction Company. Bids for the complete work, including the pumping station and the laying of the high pressure pipe, aggregated $950,000, and the time required for the work will be 400 days.

John G. Brown, general contractor, Witherspoon Building, has been awarded the contract to build a large factory building for the Central Stamping Company, 591 Ferry street, Newark, N. J., manufacturer of tin and enameled kitchen ware.

The Philadelphia Warehousing & Cold Storage Company has purchased properties on North Front and Beach streets on which it is proposed to erect an eight-story cold storage and freezing plant, for which plans are now being drawn. The properties cover an area of 165 x 225 ft. and adjoin the company's present plant. The proposed new building will measure 150 x 165 ft. A coal pocket of several thousand tons capacity is also proposed in connection with the extension.

Government Purchases.

WASHINGTON, D. C., February 23, 1909.

Bids will be received until March 24 at the office of the United States Engineer, Wheeling, W. Va., for the following supplies for power plants at dams No. 13 and 18, on the Ohio River: Gas engines, air compressors, gate winches and jacks, extra strong pipe, fittings, &c.; air tanks, water tank and tower, drilling well, &c.; excavation and furnishing concrete.

The following bids were opened February 11, Circular No. 493, for machinery for the Isthmian Canal Commission:

Class 1.—Four duplex steam pumps—Bidder 6, Borg & Hill, New York, $1331; 20, D'Olier Engineering Company, Philadelphia, Pa., $1272; 25, Fairbanks, Morse & Co., Chicago, Ill., $1030; 26, Fox Brothers & Co., New York, $1052.76; 27, Gardner Governor Company, Quincy, Ill., $1140; 51, Manning, Maxwell & Moore, New York, $1282.40; 54, Motley, Green & Co., New York, $999, accepted; 57, National Electrical Supply Company, Washington, D. C., $1036.

Class 2.—Four induction motors—Bidder 25, Fairbanks, Morse & Co., Chicago, Ill., $3740; 30, General Electric Company, Schenectady, N. Y., $3308; 48, Lincoln Electric Company, Cleveland, Ohio, $2820; 54, Motley, Green & Co., New York, $3480; 80, Western Electric Company, New York, $3168; 81, Westinghouse Electric & Mfg. Company, Pittsburgh, Pa., $3540.

Class 3.—One wood boring machine—Bidder 40, Ingersoll-Rand Company, New York, $72, accepted.

The following bids were opened February 16 for machinery for the navy yards:

Class 15.—Two galvanizing furnaces—Bidder 121, Kenworthy Engineering Company, Waterbury, Conn., $1375.

Class 16.—One plate planing machine—Bidder 47, Cleveland Punch & Shear Works, Cleveland, Ohio, $6500; 99, Hilles & Jones Company, Wilmington, Del., $9750; 157, Niles-Bement-Pond Company, New York, $6600, $7750 and $10,830; 225, William Sellers Company, Philadelphia, Pa., $7600; 255, Wickes Bros., Saginaw, Mich., $4958.

Class 17.—One punching and shearing machine—Bidder 47, Cleveland Punch & Shear Works, Cleveland, Ohio, $2500; 99, Hilles & Jones Company, Wilmington, Del., $2496; 132, Long & Alstatter Company, Hamilton, Ohio, $3100; 157, Niles-Bement-Pond Company, New York, $3140; 171, Henry Pels & Co., New York, $2250; 193, Joseph T. Ryerson & Son, Chicago, Ill., $3090; 255, Wickes Brothers, Saginaw, Mich., $2317; 266, Williams, White & Co., Moline, Ill., $2600; 286, Morgan Engineering Company, Alliance, Ohio, $3400; 287, Prentiss Tool & Supply Company, New York, $2995 and $3145.

Class 18.—One plain radial drill—Bidder 73, Fairbanks Company, New York, $608; 74, Frevert Machinery Company, New York, $594 and $648; 81, Garvin Machine Company, New York, $625; 140, Manning, Maxwell & Moore, New York, $608 and $693; 157, Niles-Bement-Pond Company, New York, $645 and $564; 232, Tucker Tool & Machine Company, New York, $576; 246, Vandyck-Churchill Company, New York, $645 and $725; 287, Prentiss Tool & Supply Company, New York, $645 and $730.

Class 19.—Five motors—Bidder 26, Burke Electric Company, Erie, Pa., $1936; 63, Diehl Mfg. Company, Elizabethport, N. J., $1783.30; 66, Electro Dynamic Company, Bayonne, N. J., $1867.50; 79, General Electric Company, Schenectady, N. Y., $2588; 164, Northern Electrical Mfg. Company, Madison, Wis., $2076; 197, Richmond Electric Company, Richmond, Va., $2300; 212, Sprague Electric Company, New York, $1728; 222, B. F. Sturtevant Company, Hyde Park, Mass., $1914; 252, Western Electric Company, New York, $1738.25; 253, Westinghouse Electric & Mfg. Company, Pittsburgh, Pa., $1959.

Class 72.—Two portable pneumatic emery grinders—Bidder 41, Cleveland Pneumatic Tool Company, Cleveland, Ohio, $60; 43, Chicago Pneumatic Tool Company, New York, $65; 112, Ingersoll-Rand Company, New York, $66.

Under bids opened December 14, Circular No. 481, for machinery for the Isthmian Canal Commission, the Babcock & Wilcox Company, New York, has been awarded, class 1, two water tube boilers and fittings, $5484.

The Volk & Murdock Iron Works, Charleston, S. C., has been awarded, class 1, seven marine boilers, $10,808, under bids opened December 21, Circular No. 482, for supplies for the Isthmian Canal Commission.

Under bids opened January 19 for machinery for the navy yards, the W. H. Foster Company, New York, has been awarded, class 1, one turret lathe, $3421, and class 2, one turret lathe, $1415.

Under bids opened February 2 for machinery for the navy yards, the Blake & Knowles Steam Pump Works, New York, has been awarded, class 132, two duplex horizontal boiler feed pumps, $226.

The Westinghouse Machine Company's Condenser.—The Westinghouse-Leblanc condenser, the American adaptation of the type of condenser which has been so favorably received in Europe, is meeting with success in this country. A number of contracts have been closed, most of which are in connection with new turbine equipment. This condenser possesses many advantages in the way of compactness, and particularly in the ability to maintain high vacuum with limited supply of cooling water. Upon repeated tests it has been able to operate within from 1 to 5 degrees difference between the temperature corresponding to the exhaust steam and that of the cooling water discharge. This represents an efficiency of the condenser of 96 to 99 per cent. These results are obtained by an unusually efficient method of handling the entrained air, and are particularly effective in cases of high cooling water temperature, 80 to 85 degrees. They also greatly favor the employment of cooling towers in connection with the condensing plant, reducing the quantity of water to be pumped and increasing the effectiveness of the cooling tower surface by delivering water to the tower at the highest possible temperature.

The statistics of the iron ore trade of Great Britain, prepared by C. E. Muller & Co., Ltd., Middlesbrough, England, show that the imports of foreign iron and manganiferous ores in 1908 were 6,057,071 tons, of which 4,479,129 tons came from Spain. The production of Cleveland iron ore in 1908 is estimated at 6,250,000 tons, as against 6,240,103 tons in 1907. The exports of magnetic iron ore from north and central Sweden in 1908 were 3,544,701 tons, against 3,467,294 tons in 1907. Of the 1908 exports from Sweden, 2,948,387 tons went to Germany and 596,314 tons to Great Britain, Belgium and other countries. The shipments of pig iron from east coast ports of Great Britain in 1908 to all countries were 906,481 tons, against 1,298,647 tons in 1907.

Lindsay Bros., Milwaukee, have won their case brought before the Interstate Commerce Commission, in the matter of rates on steel tank shipments from Goshen, Ind., to Wisconsin points. A reduction of through rates has been ordered, so as to make them not exceed the sum of the present locals.

HARDWARE

KEEPING step with the extraordinary progress which in recent years has been made in manufacturing there is a corresponding advance in the accounting department of the factory. While on the one hand there has been a great increase in variety and volume of product there has been on the other hand a marked development in the science of factory accounting. There is thus in every well ordered manufacturing plant a cost and bookkeeping system which records and summarizes the expense of the various operations and the result of the work in the different departments, as well as the loss or gain of the business as a whole. In connection with this progress constantly and sometimes rapidly increasing demands have been made upon the accountant. A quarter of a century ago a man who had a fair knowledge of double entry bookkeeping was usually considered competent to direct the work of an office force. In these modern times, however, an expert accountant with adequate technical knowledge and training, practical experience and a familiarity with manufacturing methods is required—one who is competent to devise and install systems to meet the requirements which in establishments, large and small, are almost constantly arising. The manufacturer has learned that invention has not been confined exclusively to mechanics. It is apparent also that to be eminently successful the expert should be or should become familiar in a thoroughly practical way with the processes of manufacture of the lines of goods with which he has to do, both in order that he may work intelligently and present clearly and in the most useful form the actual condition of things in the factory, so far as this can be done in figures, and also that he may be enabled to suggest improvements or modifications in method with a view to increasing the profit realized from the operation of the plant. He is thus given a position of responsibility, replete with opportunities for usefulness.

Statutes requiring that Gasoline and other dangerous fluids shall be sold and kept in cans or other receptacles painted red or other distinctive color have, within the past years, as our readers are aware, been enacted in a number of Western States. Generally speaking, they meet with approval, tending as they do to reduce the number of accidents from Gasoline explosions, the majority of which, it is asserted, arise from mistaking a Gasoline can for a Kerosene can, or from ignorance as to the proximity of the dangerous fluid. There is also a tendency to which we have called attention toward the enactment of laws relating to the putting up of goods, as for example Paints and articles such as Tacks and Rivets, the tendency of legislation being to require that the contents of the package in weight or count shall correspond to the statement on the label. Such laws, however wise and necessary, evidently result in multiplying the cares and complications incident to the manufacturing and marketing of goods on a large scale and in many States. The particular laws referred to meet with little criticism from the trade. At the same time legislators should not lose sight of the fact that by undue or misdirected zeal in such directions they may hamper business with arduous restrictions and add unnecessarily to the cares and annoyances of the mercantile world, already sufficiently onerous. In legislation of this kind the importance of uniformity should not be overlooked. If one State should compel the use of red cans for Gasoline, another yellow, another black, with similar requirements in other lines, manufacturers and jobbers doing business in different States would be confronted with problems serious indeed.

Condition of Trade.

The event of commanding significance in the market is the announcement by the leading interest in the manufacture of Iron and Steel of the abandonment of the endeavor to maintain prices. This announcement has been followed by the development of lower quotations on some of the leading Iron and Steel products and an unsettled condition in all. Notwithstanding the fact that it has for some time been becoming increasingly evident that it would not be possible to resist indefinitely the operation of the laws of trade which make for lower prices, some have been clinging to the hope that the new era. as they regard it, of co-operation and consideration for others' interests would keep the market from going to pieces and give a steady market through a longer period of comparatively inactive demand. A material reduction in prices has already been announced in several of the great Steel products and others are looked for from day to day. It remains to be seen what will be developed under the stress of competition, which again begins to play its part. An unfortunate factor is the uncertainty in regard to tariff legislation which will doubtless have a tendency to make trade still more conservative than heretofore. The influences which have been making for a lower level of prices are thus asserting themselves and justifying the caution of the railroads and other great interests which have been discounting to some extent the event which has now taken place. The trade, and indeed the country, are thus in a waiting attitude until it is seen what the course of the market will be. So far as Hardware is concerned, it is evident that lower prices of raw material will have to be reckoned with sooner or later, and the effect of this should first be seen in heavy goods, in the making of which there is comparatively little labor. In the great Wire lines no change has been made and the indications are that an effort will be made to hold the market where it is. There is, unfortunately, in this condition of things an influence to check the placing of orders, notwithstanding the fact that general Hardware will be only remotely affected by these changes in the prices of Iron and Steel. There is much to be said in favor of the view that it is desirable that values should get down to a lower level than they have for sometime held, and perhaps it will be for the good of all if by a sharp descent they reach a point beyond which they are not likely to fall, and from which there may be in due time an upward movement and a healthfully advancing market. The perplexities connected with this condition come home to manufacturers with peculiar force, as they are brought into direct contact in a large way with the market for raw material. The merchants generally have a much simpler problem—the purchasing of goods in a market which is distinctly in their favor and in such moderate quantities as their trade requires. The indications all point to the exercise of caution in this state of affairs. There is no disposition to overbuy. In

some parts of the country there is a tendency to what appears to be excessive caution, but in others trade is moving along in reasonable volume, and those who supply the retail merchants have little ground for complaint. It is not unlikely, taking things all in all, that the trade, even with a reluctant movement of business and a badly broken Iron market, is taking the straight road to prosperity.

NOTES ON PRICES.

Wire Nails.—From the important position occupied by Wire Nails and Wire products generally, especial interest attaches to the policy to be pursued by the manufacturers in the present condition of things, in which there is no longer the effort by concerted action to give regularity to the market. While no formal announcement has been made by the American Steel & Wire Company, it appears that the disposition of the company is to pursue a reasonable and conservative course, maintaining prevailing prices; unless the other manufacturers lead in breaking the market. A good deal seems to depend on the course which will be taken by the manufacturers who have been making on the quiet concessions of 2½ and in some cases 5 cents per keg, for it is doubtful if these irregularities will be countenanced as freely as heretofore. There is indeed a possibility that some irregular quotations may on this account be withdrawn. In Nails and Wire the demand has been on the whole so satisfactory that the manufacturers see no reason for reducing prices, which at present figures are not considered unreasonably high. The country generally is regarded as having light stocks and merchants must soon be replenishing. Quotations accordingly remain unchanged, as follows, f.o.b. Pittsburgh, plus actual freight to point of delivery, 60 days, or 2 per cent. discount for cash in 10 days:

Carloads, to jobbers	$1.95
Carload lots to retail merchants	2.00
Less than carloads to jobbers	2.00
Less than carloads to retail merchants	2.10

New York.—There has been a comparatively light local business during the past few days, as merchants are watching the course of the market. The advance of 5 cents a keg, which was made by some dealers on February 19, has not influenced business favorably, in view of subsequent developments in the iron and steel markets. Wire Nails are held at the base price of $2.25 per keg for small lots at store, by Nail houses.

Chicago.—New orders and specifications through the first two weeks of the month were fairly satisfactory, after which some falling off was noted. Since the announcement of the cut in steel prices, which became public last week, a sharp letup in buying has been experienced. There has been no change in price up to this time, but what competition will develop remains to be seen.

Pittsburgh.—This is one department of the general market on Finished Iron and Steel, in which prices during the last 16 months or more have been uniformly maintained. The spring trade in Wire Nails is about to open, when a material increase in demand is expected. The leading manufacturers have been in thorough accord with each other, and, most important of all, prices of Wire Nails right along have been on a conservative basis, and for these reasons the manufacturers do not feel, nor do they expect, that Wire Nails will be materially affected by conditions ruling on other lines of finished material. Consumers feel that prices of Wire Nails are not excessive and have been placing their orders at a fairly satisfactory rate and do not seem to take the position that the manufacturers should make a reduction in prices. At all events there has been no official change in prices of Wire Nails, the mills quoting the same figures that have been in effect since June, 1908, at which time prices of Wire Nails were reduced from $2.05 to $1.95 a keg. The manufacturers are advising their customers to act conservatively, and that they will be accorded the same fair treatment by the manufacturers in the future as they have received in the past. New demand is referred to as fairly satisfactory, and is believed will show material increase early in March, when spring trade is expected to actively open up. Quotations in effect by the leading mills at this writing are unchanged and are as follows, f.o.b. Pittsburgh, plus actual freight to point of delivery, 60 days, or 2 per cent. discount for cash in 10 days:

Carloads, to jobbers	$1.95
Carload lots to retail merchants	2.00
Less than carloads to jobbers	2.00
Less than carloads to retail merchants	2.10

Cut Nails.—No change has been made in the price of Cut Nails. The Eastern Cut Nail Association will hold a meeting on the 26th inst., and an adherence to present prices is anticipated, although this position cannot be positively asserted at this time. Demand continues comparatively light, and all manufacturers have not been maintaining the last advance in price, which the following quotations represent. Regular quotations are as follows: Steel Cut Nails, $1.80, base, per keg, f.o.b. Pittsburgh, for carloads. In the Western market Iron Cut Nails are held at an advance of 10 cents per keg over Steel Cut Nails, but this differential is not observed in the East.

New York.—Demand for Cut Nails is light, as is apt to be the case at this season. Small lots of Cut Nails at store are held on the basis of $2.05 per keg.

Chicago.—The demand for Cut Nails is very light, the orders coming into the market being generally for small lots to supply immediate requirements. The unsteadiness of values in other lines is reflected in Cut Nails, the regular prices of which are not being uniformly maintained. We quote the following prices which, on desirable orders, might be shaded 5 cents a keg: In car lots, to jobbers, Iron Cut Nails, $2.08; Steel Cut Nails, $1.98.

Pittsburgh.—As in the case with Wire Nails, no official announcement has been made by the Cut Nail manufacturers of any reduction in prices, and whether such action will be taken, in sympathy with other lines, cannot be stated at this time. The Cut Nail manufacturers are endeavoring to handle the present situation conservatively and for the best interest of themselves and their customers. In the absence of any official change in prices we repeat former quotations as follows: Steel Cut Nails, $1.80, base, per keg, f.o.b. Pittsburgh, for carloads. In the Western market Iron Cut Nails are held at an advance of 10 cents per keg over Steel Cut Nails, but this differential is not observed in the East.

Barb Wire.—Regular quotations have not been changed, although they have not recently been in all cases strictly maintained. Demand is light, but by the time spring business is expected doubt may have been removed and a satisfactory trade develop. Regular quotations are on the following basis, f.o.b. Pittsburgh, 60 days, or 2 per cent. discount for cash in 10 days:

	Painted.	Gal.
Jobbers, carload lots	$2.10	$2.40
Retailers, carload lots	2.15	2.45
Retailers, less than carload lots	2.25	2.55

Chicago.—The Southern trade has been disappointingly small, and new orders and specifications from that section of the country are coming out slowly. Northern trade has been retarded by unfavorable weather and because of the unsettled conditions of the market and the uncertainty that exists with respect to prices, but little business has been entered in the past week. Until doubts upon this point are cleared up there is likely to be a good deal of hesitation in the placing of orders. Up to this time no change in prices has been announced.

Pittsburgh.—Despite press reports to the contrary, there has been no reduction in prices of Barb Wire made by the leading makers, and they are working in harmony with each other to handle the situation in such a way as will accrue to the interests of the entire trade. New demand is light, but it is believed will materially increase early in March, when spring trade is expected to open up, and the manufacturers feel they will be able to control the situation and take unitedly any action that may seem desirable for the best interests of the maker

and consumer. Regular quotations have not been changed, but continue on the following basis, f.o.b. Pittsburgh, 60 days, or 2 per cent. for cash in 10 days:

	Painted.	Gal.
Jobbers, carload lots	$2.10	$2.40
Retailers, carload lots	2.15	2.45
Retailers, less than carload lots	2.25	2.55

Plain Wire.—Requirements are, for the most part, for small lots, covering immediate needs. The same price conditions obtain in Plain Wire as in Barb Wire, and no change in regular quotations has been made. Quotations per 100 lb. to jobbers in carload lots are as follows, on a basis of $1.80 for Plain, and $2.10 for Galvanized, f.o.b. Pittsburgh, 60 days, or 2 per cent. discount for cash in 10 days, the usual price to retailers being 5 cents additional:

Nos.	6 to 9	10	11	12&12½	13	14	15	16
Annealed	$1.80	1.85	1.90	1.95	2.05	2.15	2.25	2.35
Galvanized	2.10	2.15	2.20	2.25	2.35	2.45	2.85	2.95

Chicago.—For some time past manufacturers and jobbers have been specifying sparingly and showing little disposition to increase their stocks beyond what was required for immediate use. Since the reductions that have taken place in the price of steel there has been a general apprehension that it might extend to Wire and Wire Products, consequently but few orders have been placed in the past few days, and buyers are awaiting developments. At this writing, however, prices are unchanged.

Pittsburgh.—The same statements made in our report on Barb Wire apply equally well on Plain Wire. The manufacturers have the situation well under control and will continue to handle it in the future as they have in the past, with the object of conserving the best interests of the trade. New demand is not heavy, but is mostly in small lots to cover current needs. It is confidently expected that a heavier demand will develop early in March when spring trade usually opens up. Following the action of the manufacturers we make no change in prices.

Strap and T-Hinges.—Some reductions have been made in the prices of Strap and T-Hinges, ranging from 7½ to 10 per cent., and in exceptional instances even more, effective February 23, revised discount sheets of which will be ready for distribution later in the week.

Rope.—Business continues on rather unsatisfactory lines as to volume of business, which is relatively light. Prices are not being tested very severely in view of the smallness of the general run of orders, and there is no quotable change. For large orders concessions in price would probably be obtainable as the market is inclined to weakness. General quotations on small quantities of Rope, 7-16 in. in diameter and larger, are as follows: Pure Manila, 8¼ to 8½ cents; Pure Sisal, 6¾ to 7 cents. Mixed grades of both kinds grade down in price according to quality. Jute Rope, ¼ in. and up, No. 1, is 6¼ to 6½ cents, and No. 2, 5¾ to 6 cents.

Window Glass.—One of the factories making the best grade of hand blown Glass has notified its customers that it will close down this week unless the workmen accept a sliding scale instead of the flat scale under which they are now operating. This the workmen are not likely to do. It is understood that other factories are considering closing down for the same reason. The American Window Glass Company, making machine Glass, announced a reduction in discounts to 90 and 35 per cent. on single and 90 and 40 per cent. on double. The impression prevails that this move is for the purpose of forcing some of the co-operative factories into the proposed Imperial Glass Company, which they have so far refused to become affiliated with. These factories are said to be working on private agreements (of wages) and being largely the cause of the present low prices. The American Company is understood as having favored the formation of the Imperial Glass Company. The demand continues light on factories notwithstanding the prospect of renewed building activities in the spring. The market is largely in the buyer's favor, and recent quotations from jobbers in the Eastern section of the country, from jobbers' list of October 1, 1903, range from 90 and 25 to 90 and 35 per cent. discount on single, and 90 and 35 to 90 and 35 and 5 per cent. discount or double strength Glass.

Linseed Oil.—The demand continues largely for small lots, although there is a limited single carload buying at regular prices. The market is firm from the crushers' standpoint, and no effort is being made by them to stimulate business by making concessions in price. Quotations in 5-bbl. lots are as follows: State and Western Raw, 55 cents per gallon; City Raw, 56 cents per gallon. Boiled Oil is 1 cent advance on Raw.

Spirits Turpentine.—Buying appears to be influenced considerably by the condition ruling from day to day at primary points. When the tone of the market is firm at Savannah and other Southern points more activity is noted in the local market, this disappearing with less favorable reports regarding Southern conditions. The demand taken as a whole is light in New York territory. The New York market is represented by the following quotations: Oil Barrels, 43 to 43½ cents; Machine Made Barrels, 43½ to 44 cents per gallon.

RETAIL HARDWARE CONVENTIONS.

With the holding of the following conventions the extended winter series, begun in January, will come to an end:

INDIANA RETAIL HARDWARE ASSOCIATION, March 2-5, Indianapolis. Headquarters, Hotel English. Hardware Exposition. Secretary, M. L. Corey, Argos.

SOUTH DAKOTA RETAIL HARDWARE ASSOCIATION, March 2-5, Huron. Convention and Hardware Exposition at the Auditorium. Secretary, H. E. Johnson, Redfield.

CALIFORNIA STATE RETAIL HARDWARE ASSOCIATION, March 10-12, Oakland. Secretary, L. R. Smith, Oakland.

NEW ENGLAND RETAIL HARDWARE DEALERS' ASSOCIATION, March 11, 12, Springfield, Mass. Hardware Exhibition. Secretary, Charles L. Underhill, Somerville.

Alabama Retail Hardware Association.

The third annual convention of the Alabama Retail Hardware Association will be held on May 12, 13 and 14 in Birmingham, with headquarters at the Hotel Hillman. Every effort will be made by the committee in charge of the arrangements to make the gathering interesting and useful, and it is confidently expected that a large representation of the members of the association will be in attendance.

Michigan Retail Hardware Association.

At a meeting of the Executive Committee of the Michigan Retail Hardware Association, held in Saginaw, at which practically all the officers were present, it was decided to conduct a Hardware exhibition in the auditorium during the annual convention in Saginaw on August 11, 12 and 13. The Exhibit Committee comprises A. Schoenberg, John Popp and Ernest Reichle of Saginaw, Mr. Reichle being manager of the retail department of Morley Brothers. The Hotel Vincent has been selected as the headquarters for the convention. It was also decided to send a full delegation to represent the association at the annual convention of the national body in Milwaukee in May.

SAFE PADLOCK & HARDWARE COMPANY, Lancaster, Pa., announce that while its factory buildings were damaged by fire, recently, the foundries, some distance away, were not damaged. On this account the company will be able to resume business very soon and expects to be able to supply the trade on or about March 15. With regard to machinery and horsepower of boilers and engines required for the new factories the company is as yet unable to give any figures.

The Rio Grande Hardware & Machinery Company, Mercedes, Texas, was incorporated January 26 and will handle general Hardware, Farming Implements, Wagons, Buggies, Gasoline Engines and Supplies. The company is capitalized at $15,000, of which $8000 is paid in. The incorporators are: G. K. Wattson, president and secretary; Hugh Hamilton, vice-president and treasurer, and J. G. Wattson and E. McK. Hamilton.

ILLINOIS RETAIL HARDWARE ASSOCIATION.

The twelfth annual convention of the Illinois Retail Hardware Association was held in Springfield, February 17-19, inclusive. President T. J. Mathews called the gathering to order Wednesday afternoon, at which time more than 300 members were present. The proceedings began with an invocation by the Rev. T. D. Logan, D.D., of Springfield. The assemblage then joined in singing "America."

The address of welcome to the city was made by A. G. Murray, corporation counsel, who represented the mayor, who was unable to be present. The speaker sketched the influence exerted on civilization through the medium of articles peculiar to Hardware interests, since long before the Christian era. Nicholas R. Roberts, executive secretary of the Chamber of Commerce, also extended a felicitous greeting.

H. G. Cormick, Centralia, former president of the organization, responded to the welcoming addresses. He referred to his privilege in having attended all of the 11 preceding conventions and drew attention to the absence of any desire of his fellow members to constitute a trust or seek to regulate prices. He paid a tribute to Hardwaremen as patriotic, pride loving, civic boosting citizens of their various communities, in each of which, undoubtedly, the Hardware merchant is invariably one of the prominent citizens. He dwelt on the friendships fostered at each meeting that are never forgotten, which have lasted through the intervals of years, each gathering bringing together a body of friends who are glad to meet and review the experiences of the year. An opportunity is also afforded of giving to each the results of business efforts and the discussion of the future of their business. Some of the sentiments uttered were that with the patriotic feeling pervading Illinois Hardwaremen there was hope of building even better in the future than in the past; developing men of action whose consciences will be as true as the magnetic needle to the pole; men who have a message to tell and will tell it; who have a work to do and will do it; who will not deceive and who are not too lazy to work nor too proud to be poor.

H. E. GNADT.

LEON D. NISH.

T. J. MATHEWS.

Greetings from Associations.

H. L. McNamara, Janesville, Wis., vice-president of the National Retail Hardware Association, was the bearer of greetings from the national body, with the assurance that the Illinois organization is a bright star in the group. He believed that association membership makes better competitors, increased profits and decreased troubles. Much had been accomplished in harmonizing differences between manufacturer, jobber and retailer. Reference was made to good roads and civic government questions advanced by the State Association.

C. A. Peck, Berlin, Wis., secretary of the Wisconsin Retail Hardware Association, conveyed the greetings of its 748 members, and referred to the thirteenth annual meeting the previous week in Milwaukee as one of the most successful ever held. The question at that meeting was broached of sending delegates into adjoining States to attend the annual conventions and obtain helpful ideas. Mr. Peck favored the getting closer together of competitors, not for combinations on prices, but for a better fellowship, and asserted that once a competitor is convinced that you are in business to make money price questions will in large measure regulate themselves.

George E. Green of Peoria, secretary of the Retail Merchants' Association of Illinois, conveyed the greetings of that organization, which had just held one of its most largely attended and most enthusiastic meetings, and emphasized the great value of organized effort and co-operation. He then enumerated various legislative propositions as to garnishments; the regulation of the fly-by-night itinerant vendors by the imposition of a State license; giving municipalities the right to own, operate and sell gas and electricity, and to regulate prices and other matters of interest to both citizens and merchants.

Reports of Secretary and Treasurer.

Leon D. Nish, Elgin, in his report as secretary, stated that there had been an increase in membership during the year of 162, including accessions during the convention. The present membership of the organization was almost 1100.

The report of H. E. Gnadt, Chicago, treasurer, showed a balance on hand of about $1000.

Convention Committees.

The president appointed the following convention committees:

Location of Next Place of Meeting: W. C. Costello, Chicago; Guy McCurd, Bloomington; Aug. C. Strout, Quincy; W. H. Hauss, St. Louis; Geo. F. Meyer, Peoria; M. Fahey, Decatur; L. D. Ray, Rockford.

Nominations: Geo. Engelhardt, Chicago; L. Pabst, Kankakee; H. G. Cormick, Centralia; C. H. Williams, Streator; O. H Howe, Streator; L. F. Schroeder, Barrington; L. H. Zumbrook, Springfield.

Auditing: Fred Geissing, East St. Louis; J. Bowman, Flora; F. W. Schultz, Chicago.

Press: Harry Reid, Bloomington; C. H. Albright, Newton; Henry McVeigh, Springfield.

Resolutions: Grant Porter, Chicago; Charles A. Davis, Sterling; Charles Anderson, Donovan; David Refior, Ottawa.

In Memoriam: John Schubert, Chicago; R. L. Mason, Canton; J. S. Strohn, Lovington.

Revision of Constitution: L. D. Nish, Elgin; C. H. Williams, Streator; H. G. Cormick, Centralia.

Question Box.

The Question Box discussion was under the efficient charge of J. H. Vawter, Salem. Among the questions discussed were:

Is there greater liability to the insured in the Hardware mutuals than in the old line companies?

Are the catalogue houses working harder than ever before to get business, and are they getting more business?

Why cannot the manufacturers adopt a standard size catalogue, say 7½ x 10 in., or 8½ x 11 in., with wide margin on the page, to allow of same being fitted into a loose leaf binder?

Is a lumber dealer allowed to take orders for Hardware when he does not carry a line of Hardware?

How can this association be made more useful to its members?

Is it a good policy to give a pocket knife to your customers when they pay their bills?

If you do give a knife when they pay their bills, what do you give your customers who pay cash?

Is it right for dealers to buy from manufacturers, and cut out the jobbers?

Should the exhibition feature be encouraged at convention meetings?

What is the best way to keep trade at home?

Why would it not be a good idea to have all Cordage, Rope, Twine, &c., put up at net weight?

What can be done to stop wholesale houses from selling goods at retail?

Do you know whether your tin shop pays or not?

Why are Ice Cream Freezers sold by so many dealers without a fair margin of profit?

Is it advisable to patronize a jobber who also sells at retail?

Should a merchant make a difference in the price to a cash customer and to a credit customer.

Is it dangerous to give a signed order especially for a new line of goods? In others words, when you give a traveling man an order to sign that order?

Is it right to buy of concerns who sell catalogue houses?

Do show windows pay?

Is it wise for the average retailer to incorporate his business?

The discussions of these various topics was animated and interesting and many hints and suggestions of value were drawn out.

Election of Officers.

The officers and committees chosen for the ensuing year are as follows:

PRESIDENT, Grant Porter, Chicago.

VICE-PRESIDENT, Charles Woodward, Carlinville.

SECRETARY, Leon D. Nish, Elgin.

TREASURER, H. E. Gnadt, Chicago.

EXECUTIVE COMMITTEE: J. H. Vawter, Salem; J. E. Voorhees, Bushnell.

LEGISLATIVE COMMITTEE: Charles H. Hurst, Decatur; J. L. Smith, Chicago; Charles Robinson, Springfield; Charles Oldendorph, Centralia; W. H. Harris, East St. Louis.

INVESTIGATING COMMITTEE: G. S. McCurdy, Bloomington; J. S. Brown, Sparta; David Refior, Ottawa; J. Bowman, Flora; C. G. Gilbert, Oregon.

DELEGATES TO NATIONAL ASSOCIATION: The president, vice-president and secretary; H. G. Cormick, Centralia; Fred Geissing, East St. Louis; O. H. Howe, Streator; E. N. Howell, Dixon; G. S. McCurdy, Bloomington; Fred Seigrist, Highland; Robert Strelow, Peoria; Fred Schlitt, Springfield.

Resolutions.

Votes of thanks were given to the local committees of arrangement and entertainment for the splendid results of their efforts, and to the exhibitors who contributed so much to the success of the convention.

It was also resolved to recommend to the consideration of manufacturers the adoption by them of standard sizes of catalogues for similar lines in loose leaf form.

Other resolutions adopted were in support of the proposed new garnishment law, presented by the Merchants' Association of Illinois; approving and supporting the efforts of the Deep Water Ways Commission of the proposed system from the Lake to the Gulf and continued opposition to parcel post legislation.

It was also decided to suggest to the express companies of the country that one of the surest means of stopping the clamor in favor of a parcel post will be by a reduction of express charges to a more reasonable basis and more speedy adjustment of damage claims.

Window Display Awards.

The prizes for window displays in the State at large were awarded by the committee as follows:

For towns of less than 3000 population to James E. Vorhees, Bushnell.

For towns of 3000 to 10,000 to George W. Brown, Jr., Hillsboro.

For towns of 10,000 to 20,000 to W. E. Good, Kewanee.

For towns of over 20,000 to the Lagemann Hardware Company, Quincy.

In the local (Springfield) window contest the first prize was awarded to Miller & Son, and the second prize to J. L. Hudson & Co.

Convention Notes.

The committee on location of next place of meeting reported that only two cities—Bloomington and Chicago—had been suggested, and the convention voted in favor of Bloomington.

Telegrams of congratulations and greeting were received from the Nebraska Retail Hardware Association and the West Virginia Hardware Association, who were also in convention last week.

G. R. Lott of Chicago, a former secretary of the organization, but no longer a Hardware merchant, was unanimously elected an honorary member, as was Charles Mauer of East St. Louis, also a former member.

C. H. Williams, in reporting on the visit of the delegates to the last national convention at St. Louis, said that the Hardware fraternity of St. Louis were lavish in their hospitality, but were very careful to arrange nothing that would interfere with the work of the convention. Every delegate went home with a very warm regard for St. Louis, and with renewed energy and inspiration for taking up anew the business routine.

PRESIDENT MATHEWS' ANNUAL ADDRESS.

The able address of T. J. Mathews, Mt. Vernon, president of the association, was in part as follows:

With each annual convention we open up a new chapter in the history of our association and a new chapter in our business experience, but if we are wise we will not close and seal the pages that are past, be they the records of unsuccessful efforts, or of our most profitable business ventures. Rather let them remain open that we may profit alike by its failures and its successes; one to flash the red signal of danger, the other a beacon to light our pathway to greater things.

Past Year Full of Valuable Lessons.

The year following a great panic is seldom one of conspicuous business successes, but is always full of valuable lessons for the business student who is alert, observant and up to date. If we have read them aright and face the future with the determination to profit by them, no doubt the recent business depression will have been to some of us a blessing in disguise.

Some of us have perhaps enjoyed posing as large buyers and congratulated ourselves on our shrewdness in securing inside prices, losing sight of the fact that our net annual profits might have been larger had we kept a greater variety of goods and bought them in smaller quantities. It isn't nearly so important to be known as shrewd buyers as it is to be careful buyers.

The merchant who invests a thousand dollars in Nails at a saving of a few cents a keg isn't in it for profits with the fellow who only invests $100 and turns it 10 times to the other fellow's one—to say nothing of the $900 released for investment in other goods he might but does not carry. After all, the shrewdest buyer is he who buys according to his needs.

Taking Advantage of Slack Times.

We have no doubt among us some wise members who have taken advantage of the slack times to repaint and redecorate their places of business, and to perhaps bring forward their dead, semidead and other surplus stock and force it upon the market in a series of special sales at bargain prices, realizing that what is lost on the articles sold is often regained in advertising value.

The merchant who pursued an advertising campaign of this kind is perhaps the man who did a good business throughout the year, and if he did not increase or even equal his sales of previous years, has at least the satisfaction of knowing it has been to him a most profitable one in enabling him to dispose of unprofitable stock and put his business in better shape for the future.

Collections.

Many of our members are prompt, careful and efficient collectors, while others may allow collections to take care of themselves until business necessities jog them up only to find that when they need the money most is the very time the other fellow finds it the hardest to make payments. It is then he learns the lesson, if he did not know it before, that the proper time to collect an account is the date it becomes due, and that it is neither an act of friendship nor of wisdom to extend long credits.

Catalogue Houses Seeking Business from Retail Merchants.

Of late years association members have found it somewhat difficult to get catalogues from the mail order houses, but last month one of them called the turn upon us by send-

ing out catalogues of their own volition, accompanied by a form letter in which they posed as jobbers and solicited a share of our patronage. I have heard of innocent retailers patronizing these institutions, but none of them belonged to the Hardware Association.

One of our active members did send out a feeler asking if sufficient discounts would be given dealers to enable them to sell their customers at catalogue prices and received the expected reply that "in no case could they deviate from their printed prices, but treated all customers alike." Most of us have been aware that these companies have not prospered during the past year or two, but few of us expected them to seek succor (or suckers) in our camp.

Parcel Post Opposition.

But do not get the idea they are no longer a force to be dreaded. The mail order houses are here to stay and so long as we ourselves remain in business we will have their encroachments to guard against. Their most dangerous move so far is their active, effective and persistent championship of the parcel post question. Should they succeed in their efforts to induce Congress to pass a bill giving us a parcel post of even the simplest and most limited experimental form, they will have in their hands the most dangerous weapon that could possibly be wielded against the country retailer.

To prevent the passage of such a measure every merchant should be on the firing line. It won't do for you to allow your association officers to carry on the battle alone—no officer ever won a battle—it's the fighting ranks that carry consternation into the camp of the enemy, and unless you are with them your officers are helpless. Petitions to Congress are of but doubtful value, but use them for what they are worth and follow up with personal letters of protest to Senators and Congressmen, not forgetting the Postmaster-General of the new administration.

Cultivating the Local Editor.

Keep a close watch on all trade publications and other periodicals for articles containing arguments against the parcel post and pass them on to your home editor with a request for publication. At the same time it would be a gracious act to give him an order for some printing or the copy for a new advertisement. It would prove a most effective argument for the insertion of the clipping, and at the same time might be performing a duty you owe to your business, for contrary to what some of us may think, advertising is not an expense but a very profitable investment. The kind that don't pay is the kind you fail to put yourself and the heart of your business into.

So help your printer, not for his sake, but for your own, and he will help you to educate your community to the point where it can see that its own best interests are served, and its continued prosperity can only be assured by trading at home.

A Patriotic Duty.

I know that retailers have been accused of selfishness in fighting parcel post legislation, and it may in the beginning have had its influence, but it has long since passed that point and it is now a fight against the quintessence of selfishness itself. That such a measure would hurt us individually is merely incidental. We should conduct this fight as a patriotic duty we owe to our country and for the good of our short-sighted fellow citizens who cannot see that in supporting a parcel post measure they are in effect robbing their own children of a portion of their inheritance by destroying its future values.

The Association Secretary.

In my annual address of a year ago I suggested the desirability of employing the entire time of our secretary in advancing the interests of our association. This year I wish to renew that recommendation. As our membership grows the duties of the office become more exacting and the demands upon the secretary's time more insistent. With his constant and undivided efforts devoted solely to our interests much might be accomplished that is not now attempted.

If we are to continue giving Hardware exhibits during our conventions, it is advisable that the secretary should be the officer held responsible for their success, instead of local committees without previous experience in the work. That these committees have been so brilliantly successful in the past is no reason why they should continue to incur the entire responsibility in the future. They should have the help that only experience can give—the help that makes hard work easy—and our secretary should be the man to furnish it.

FREIGHT CLAIMS.

The following valuable paper on the subject of freight claims was read by R. C. Richards, general claim agent of the Chicago & Northwestern Railroad:

The matter of the presentation, investigation and adjustment of freight claims has during the last 10 years become a bugaboo not only to the railroads, but also to their patrons.

No one item in the expense of operation of the railroads has increased in any such proportion as that of the cost of settlement of freight claims, as their percentage in the cost of operation during that period has doubled, and if the percentage of other items in the cost of operation had increased in the same ratio there would have been no profit left.

The last statistics published by the Interstate Commerce Commission were for the year ending June 30, 1906, and for that year the amount paid for loss and damage was $21,000,000. It is fair to assume, I think, that for the year ending June 30, 1908, the amount would approximate $24,000,000, and it is, I regret to say, showing no perceptible decrease, as in view of the large decrease in freight earnings it certainly should have done.

Obligations of a Common Carrier.

Generally speaking, when property is delivered to a carrier for transportation it must carry the same to destination, unload it (if in less than carload lots) and have it ready for delivery to consignee in as nearly the same condition as that in which it was received as is practicable or pay for the same, unless its failure so to do is caused by the act of God or the public enemy.

Ordinarily claims are presented for loss of a shipment or a part thereof, for damage to the whole or a part of a shipment, for damages caused by delay en route or for misdelivery. I should say that two-thirds of the claims are for damage and one-third for loss, and a very large proportion of all claims presented are on less than carload shipments.

Under the terms of the new Uniform Bill of Lading, which has been so generally adopted by the railroads under the recommendation of the Interstate Commerce Commission, the extent of the liability of the carrier is fixed at the invoice price of the property at the point of shipment. With the exception of that provision, I think it is generally admitted the provisions of the Uniform Bill of Lading largely increases the liability of the carrier, especially in the case of loss by fire.

Causes of Increase of Number of Claims.

The increase in the number of claims presented has been largely caused:

By failure to properly mark packages of less than carload freight with the name and address of the consignee, when if so marked, even if shipment goes astray, it will generally round up at destination.

By the packing of articles in insecure or fragile packages which will not stand ordinary transportation and the transfers that are frequently necessary in the handling of package freight.

By the carelessness of employees of carriers in handling, transferring and delivering freight, caused in many cases by reason of their inexperience, lack of familiarity with the rules and lack of care.

By change of employees caused by the increase in the business; by promotion of inexperienced men and the filling of their places with inexperienced help; by death and resignations, which have come so fast that it has been extremely difficult to employ and educate competent men in the railroad or any other business or to make them realize the necessity of complying with the rules.

By receipting for property which was never delivered to the carrier, caused by the failure of agents to check property before issuing receipt.

By delivering property to consignees and failure to take proper receipts for the same.

Suggestions for Facilitating Claim Settlements.

Some day, and I hope it will be in the near future, a part of this difficulty will be avoided by the establishment by the railroads of bureaus of employment and schools for the instruction of men in the duties of the positions they are to fill and the rules and laws regulating the handling of traffic and the operation of trains, so that there will always be a list of eligibles to draw from who have at least a theoretical knowledge of their duties and how to perform them. When this is done I believe many of the causes of claims, as well as of train accidents, will be eliminated and the transportation of both passengers and property will be rendered more secure as well as more expeditious.

By new methods of transportation in the way of power brakes and automatic couplers, which while they have undoubtedly made the matter of passenger transportation much safer and has resulted in the saving of the lives of many employees, has also resulted in a very large increase in damage to freight in the process of transportation; but now that the matter is being given more attention, it is hoped that an improvement will be made.

One of the many causes of claims is the bill of lading, or "order," shipment, which during the last few years has increased in the business world for reasons that are well known to you and which is a nightmare to so many agents, because the insistence of consignees that goods be delivered with the bill of lading, which means an extension of credit to the consignee by the railroad company which the seller for good reasons had refused.

A Successful Year's Work.

For the year ending December 31, 1908, there was presented to the Northwestern 107,821 claims, during which year we disposed of 112,096, or about 4275 more than we received—so we succeeded in cleaning up a lot of old matters and keeping even with the current work besides. During that time we disposed of by payment 98,599 claims, amounting to $674,345.30, of which 38,238 were paid on presentation. The others—13,497—were disposed of by finding the property for which claims were presented or in some other manner generally satisfactory both to the claimant and to the company.

Out of 107,000 claims presented we had 82 lawsuits, so small a percentage as to be hardly worth while mentioning, but I refer to it as I believe it will demonstrate an honest intention on our part to pay our debts with reasonable promptness.

Some of the Claim Agent's Difficulties.

Claims on shipments local to our line, if properly presented accompanied by the necessary papers to substantiate the loss or damage, are generally disposed of in a very short time, and, as stated before, we p id during the year of such claims 38,238 when presented. The others probably average 25 or 50 days before settlement, although occasionally a much longer time, I regret to say, is taken; but in nearly all such cases the delay is on account of the freight having passed over two or more lines and the difficulties in procuring the necessary information on which to act, while difficulties are not and probably never will be understood by any one other than those who actually handle the claims. They are the result of a combination of causes too numerous to mention, but quite generally by carelessness of agents and investigators, and also by the failure of claimants to give correct information about the shipment on which claim is presented.

Method of Handling Foreign Line Claims.

Foreign line claims, under the rules of the Freight Claim Association (the adoption which was brought about by a combination of Southern and Western roads), are now being investigated direct by the line to whom the claim is presented, instead of being passed from line to line for investigation, as was formerly the custom. And with most of the roads the line investigating the claim and finding the same to be meritorious has authority to pay it and charge it out to the liable line if the loss or damage is under $100. I regret to say, however, that some of the trunk lines east of Chicago will not permit this to be done, but some day it is hoped that all the roads will agree to the same manner of investigation and adjustment, and when they do many of the delays connected with adjustments will be obviated.

Concealed Loss or Damage Claims.

One of the difficult class of claims are those for concealed loss or damage—where the package goes through in apparently the same condition as that in which it was received from the shipper, in sealed cars, shows no indication of having been broken open or contents being removed, or having met with any accident which would damage the contents. Claims of this nature are, I think, increasing in number. Frequently when the case is opened it is found so full that nothing else could be put into it, and often affidavits are made that the items for which claim is presented were actually packed and payment is insisted upon, and if refused patronage is withdrawn.

Average Amount of Claims.

The average amount of a claim is between $6 and $7, although frequently they run up into very large sums. Claims should ordinarily be presented by the consignee, who is the *prima facie* owner of the property, and unless he is located in the city at which the carrier has its headquarters should be presented through the local agent, together with the bill of lading, paid freight bill, bill of claim and the invoice or certified copy thereof. The agent to whom presented will then forward the claim to the claim department, together with this report, and if the necessary information is furnished at that time the claim can be promptly disposed of, especially if a local one.

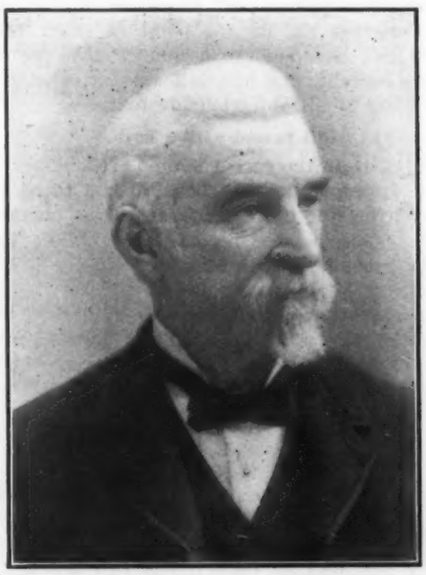
Routine of Claim Settlements.

As soon as a claim is received the papers are properly put together, the claim is entered and numbered, and if same is not to be immediately paid an acknowledgment sent both to the claimant and the agent presenting the claim, giving its number and a prefix, the latter indicating the investigator who is handling the matter; and in case any further correspondence is necessary, the number with the prefix should always be given in order that the matter may be readily found. If additional information is desired the claim is assigned to some investigator for further inquiry, which is ordinarily done by correspondence, although frequently where large amounts are involved or the circumstances surrounding the claim are peculiar, a personal investigation is made by a representative of the department. And if the claim is found to be meritorious, it is passed for payment to the accounting bureau of the department and a check is drawn for the amount and sent to the claimant, the indorsement of the check being a receipt in full for the claim.

DEATH OF LEWIS J. ATWOOD.

LEWIS J. ATWOOD, president of the Plume & Atwood Mfg. Company, died at his home in Waterbury, Conn., from the effects of an apoplectic stroke, Tuesday, February 23, in his eighty-first year. He had presided at the last annual meeting of the company, February 9, when he was re-elected president for the ensuing year, attendance at that meeting having been his last official act.

Mr. Atwood was born in Goshen, Conn., April 8, 1827. He was a direct descendant of Henry Woodward, who came here from England in 1666, settling at Wethersfield, and of Dr. Thomas Atwood, a physician who accompanied Cotton Mather in his search for religious liberty. Mr. Atwood early displayed a pronounced liking for mechanical pursuits. At the age of 12 he was a clerk in Watertown and went to Waterbury in 1845. He soon after started the manufacture of Buckles and Buttons, but owing to scarcity of capital was unable to continue. He then started a flour and feed store, but felt that the manufacturing business was his specialty and several years later took up the manufacture of Daguerrotype Cases, Lamp Burners and other brass goods, after having had charge of a department in the firm of Holmes,



LEWIS J. ATWOOD.

Booth & Haydens, in which he turned out lamp burners and kindred work.

In 1869 Mr. Atwood became a stockholder of the Holmes, Booth and Atwood Mfg. Company, the name of which was later changed to the Plume & Atwood Mfg. Company. This business was for years conducted under his management, both the mills at Thomaston and the factory in Waterbury. Mr. Atwood became secretary of the company in 1864 and in 1890 was elected president. At one time he was one of the owners of the present American Ring Company.

Mr. Atwood possessed a decidedly mechanical turn of mind and had taken out many patents for improvements in Coal Oil Burners, Lamps and Lamp Fixtures, it being said that he had perfected more devices for using Kerosene Oil than any other individual maker. He was also the originator of various patented processes in manufactures relating to the handling of raw material. His personality among those who knew him intimately will never be forgotten, especially his pleasing and humorous way of extricating himself from difficult situations. While in the last six years he had not been very active in the conduct of the company, scarcely a day passed when he did not call at the factory to see how things were progressing.

Mr. Atwood was for years a deacon in the Second Congregational Church, and was chairman of the Building Committee of the Young Men's Christian Association in Waterbury, and for five years its president. He was a liberal contributor to that organization and largely through his efforts and financial support the fine building now occupied by the association became possible. He is survived by a widow and one son.

THE PARCEL POST AND POSTAL NOTE SITUATION.

WASHINGTON, D. C., February 23, 1909.

EVENTS of the greatest importance in the parcel post campaign have occurred during the past week. The Senate Post Office Committee, which had been relied upon by the retail merchants of the country to aid in preventing objectionable legislation, capitulated under the pressure brought to bear by the Postmaster-General and reported with a favorable recommendation the annual post office appropriation bill with an amendment authorizing an experimental parcel post on rural routes in two counties to be selected by the Postmaster-General; also the bill codifying the postal laws and containing an elaborate provision authorizing a system of postal notes in denomination from 1 cent to $5, with fees materially below those now charged for money orders.

P. O. Appropriation Bill Passed by the Senate Without Parcel Post Amendment.

The retailers' national associations, however, have been rendered keenly alert by the wide publicity given, through the columns of *The Iron Age*, to the postal developments of the session, and as a result of their efforts the experimental parcel post project was stricken from the appropriation bill on the point of order that new legislation can be added to a budget measure only by unanimous consent, and the bill was afterward passed free and clear of all objectionable features.

Bill Passed with a Rush.

Never before in the recent annals of Congress has the post office appropriation bill been rushed to its passage so shortly after the committee's report as on this occasion. Chairman Penrose reported the bill on the 17th inst. and gave notice that he would call it up for consideration immediately after the passage of the pending naval appropriation bill. Certain minority Senators were engaged in a filibuster against the naval bill which promised to last for several days, but under the drastic action of Senator Hale, who demanded and secured night sessions for the consideration of that measure, it was passed during the evening of the day on which the post office bill was reported.

Chairman Penrose accordingly called up the postal budget on the 18th and asked for its immediate consideration. Several Senators objected to taking up the bill until they had had an opportunity to examine its provisions, and Senator La Follette of Wisconsin made a formal motion that the bill be laid over for one day. Chairman Penrose, however, was unwilling to concede any time and declared that he would explain fully any feature of the bill concerning which information might be desired. With this rather unsatisfactory assurance those Senators desiring to examine the bill were obliged to be content and the reading of the measure was proceeded with at railroad speed.

Retail Interests Voice Their Opposition.

The amendment authorizing an experiment in the adaptation of the parcel post to rural routes as embodied in the bill by the Senate committee was framed by the Postmaster-General and embraced provisions with which the readers of *The Iron Age* are familiar. The instant the bill was filed in the Senate the leading organizations of retail merchants throughout the country, including the Hardware merchants, the druggists, the grocers, jewelers and the traveling men, were advised of the character of the parcel post amendment, and in a few hours a delegation of their representatives was on the ground in Washington, under the leadership of Chairman W. S. Richardson and S. L. Hilton of the National Association of Retail Druggists. The character of the Postmaster-General's proposition, the many fallacies underlying it and the practical objections of the retail merchants, were explained to many Senators.

Senator Bailey Interposes Objection.

It was obvious from an examination of the amendment that it was repugnant to the rule of the Senate that new legislation can be added to an appropriation bill only by unanimous consent, and the question was therefore as to whether a Senator could be found willing to antagonize the Post Office Committee, and incidentally the Postmaster-General, by raising the point of order, which it was morally certain would be sustained. How many Senators would have done so will never be known, for hardly had the clerk finished reading the amendment when Senator Bailey of Texas, who had consistently objected to the saddling of extraneous "riders" upon the annual appropriation bills, rose in his place and submitted to the chair the suggestion that the amendment was "general legislation and plainly obnoxious to subdivision 3 of Rule 16."

Chairman Penrose, apparently with no great reluctance, replied that a similar objection was sustained to the same paragraph last year and that he did not suppose that it had "grown immune" since then, whereupon the chair ruled that the proposed amendment was "in contravention of the rule cited by the Senator from Texas."

Twenty minutes later the bill was put upon its passage. Neither house having added a parcel post amendment, the Conference Committee to which the bill was immediately sent had nothing objectionable before it and the bill will doubtless receive the President's signature before this issue of *The Iron Age* reaches its readers.

The Postal Note Provision.

The measure providing for the codification of the postal laws has been placed on the Senate calendar, and although the Senate Post Office Committee leaders are planning to call it up at an early date, it is believed that the addition of the postal note provision has rendered it objectionable to a number of influential Senators and has materially increased the difficulty in the way of securing its consideration.

A duplicate of the Senate bill is now pending in the House Post Office Committee, where a contest is being waged over the postal note provision, and, although it is possible that this feature may be retained in the bill as reported, the opposition it has encountered will operate to prevent the passage of the bill during the few days remaining of the session. Congress adjourns *sine die* in nine days, and with the codification bill on the foot of the Senate calendar and in the House Post Office Committee it is quite possible that the opponents of the postal note project will be able either to defeat the bill or secure the elimination of the objectionable provision.

The Absurdity of the Proposed System.

from the standpoint of the busy citizen, is not confined to any one feature, but is clearly reflected in sections 573 and 575, from which it appears that unless postal notes are desired for round sums it would be necessary to secure two notes to make a single remittance, no matter how small. Any one desiring to send 13 cents, for example, would be obliged to obtain two notes, one for 10 cents and another for 3 cents. This rather lame expedient also imposes on the postal service the obligation to issue notes of denominations ranging from 1 to 9 cents without any fee whatever, which, of course, would materially increase the current postal deficit.

The special feature of the scheme relied upon to secure the co-operation of the 60,000 or 70,000 postmasters throughout the country is found in section 588, which provides that postmasters of the third and fourth class —who constitute the great majority of the service—shall be allowed, as compensation for the transaction of postal note business, a commission of 1 cent for each note issued. Inasmuch as the fee charged for notes up to 40 cents is only 1 cent, and from 40 cents to $2.50 is but 2 cents, it is perfectly clear that the postmasters would pocket the lion's share of any receipts under the proposed system, and the net result would be a heavy loss to the Government equal to the income from money orders, at 3 cents each, which would be displaced by the new postal notes.

WEST VIRGINIA RETAIL HARDWARE ASSOCIATION.

The third annual convention of the West Virginia Retail Hardware Association was held last week at the Hotel Kanawha, Charleston. There was a good attendance and the proceedings were entered into by all with much enthusiasm and energy.

The following committees were appointed by President Frye to serve during the convention:

NOMINATIONS.—F. R. Clelland, Fairmont; J. F. Latham, Buckhannon; Fred Powell, Salem; S. E. Bird, Charleston, and C. L. McIntosh, Ravenswood.

RESOLUTIONS.—H. W. Sinsel, Cameron; J. L. Hall, Fairmont; C. J. Richardson, Marlinton; S. R. Wells, New Martinsville, and H. E. McGregor, Cairo.

AUDITING.—J. M. Walker, Wellsburg; J. S. Work, Montgomery, and Asa Doak, Grafton.

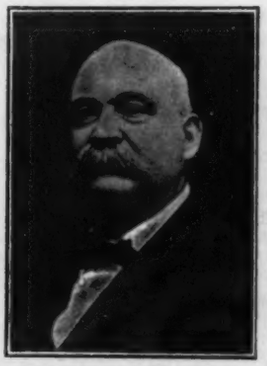
The Question Box.

The Question Box was capably handled under the leadership of F. R. Clelland, Fairmont.. Among the questions were those relating to the advantage to the dealer of a 5 and 10 cent counter, the best system of collections and increasing the membership. Discussion of the 5 and 10 cent counter proposition developed the fact that very few of these are maintained in West Virginia stores.

Traveling Men's Entertainment.

Everywhere and at all times the traveling contingent representing the honorary membership of the association was conspicuous in the social side of the programme. At the conclusion of the Wednesday afternoon session a special entertainment, provided by the travelers, was given in the auditorium of the Kanawha Hotel. Conspicuous in getting up this entertainment were James N. Summers, Belknap Hardware & Mfg. Company, Louisville; James F. Ball, Barrett Mfg. Company, Allegheny; W. H. Asbury, Enterprise Mfg. Company, Philadelphia; William M. Locke, Peters Cartridge Company, Cincinnati, and others. A feature of this occasion, as well as others in which those attending the convention took part, was the singing of Sheriff Clemens of Ohio County.

W. A. VANCE.



T. B. FRYE.

LESLIE HAWKER.

R. H. SMITH.

New Officers.

At the election of officers for the ensuing year the recommendation of the Committee on Nominations was indorsed, with the following result:

PRESIDENT, W. A. Vance, Clarksburg.
FIRST VICE-PRESIDENT, R. H. Smith, Ronceverte.
SECOND VICE-PRESIDENT, J. T. Loughney, Sistersville.
SECRETARY-TREASURER, Leslie Hawker, Shinnston.

Mr. Vance, the new chief executive, is a young man of worth and ability and an excellent presiding officer. He will, through the indorsement of a recommendation made by the Committee on Resolutions, have the advantage of an advisory board of five members, with retiring President Frye as chairman. The remaining four will be named by President Vance later and will represent each Congressional district of the State. This arrangement is intended to be a permanent feature of the association work. President Vance and Secretary-Treasurer Leslie Hawker were named as delegates to attend the meeting of the national organization at Milwaukee in May.

Paint Legislation.

M. D. Chapin, Billings-Chapin Company, Cleveland, Ohio, was presented as the chief speaker of the Wednesday afternoon session. Mr. Chapin said that all good Paint manufacturers welcome any legislation that will correct such abuses as short weight or short measure, or the mislabeling or misbranding of goods by claiming something on the label which is not strictly true of the contents of the package. Along these lines Mr. Chapin pleaded for sane legislation. The speaker warned his hearers that there was danger in the subject of formulas and if Congress would pass such laws or let a large number of States have such laws, the mail order man would get in his work on houses of national reputation, duplicating their formulas at a price which the merchant could not meet without sacrificing all his profits.

Mr. Chapin gave several valuable scientific illustrations of mixtures, showing to what extent legislation may be carried by dividing and misinterpreting the laws of what constitutes real genuineness in Paint mixtures. He said:

I could multiply such instances over and over again, but have cited these, which perhaps you are most familiar with, to show you that the formula on the label by no means indicates the quality of the Paint in the package. It really affords the man who will use the lowest quality of goods giving a certain analysis an opportunity to undersell the man who makes a very superior Paint of exactly the same formula. It would no more follow that the quality of Paint was duplicated because the formula was the same than it follows that two housewives by taking the same flour, water, yeast, &c., will produce the same results in bread.

The adverse effect of this legislation will not stop here. Before mixed Paints came upon the market lead sold for 15 cents per pound, linseed oil for 75 cents per gallon, turpentine for $1 per gallon, Indian red for $1.25 per pound and so on. Paint cost so much that few could afford to have their houses properly protected against the elements; the result was that no one could follow the profession of painting exclusively and make a living. The introduction of mixed Paints led to so great an economy in the cost of painting that painting became far more common, and with it such an increase in the production and consumption of painting materials that costs dropped to the point of which you are familiar to-day.

In conclusion the speaker said that any one who indorses such laws is doing his utmost to benefit the catalogue houses, and merchants generally should express themselves in no uncertain terms in all States where formula legislation is threatened, and wherever there are formula laws, steps should be taken to secure the repeal of such provisions. Laws requiring net weight and full measure and protecting against mislabeling and misbranding goods are all right. They should be on the statute books of every State, and protect all industries, including the Paint business.

The Exhibits.

Among the exhibitors at the convention were the following:

ACME WHITE LEAD & COLOR WORKS, Detroit, Mich.: Represented by Norbert Bruske.

E. C. ATKINS & CO., Indianapolis, Ind.: Represented by J. O. Tate.

BARRETT MFG. COMPANY, Allegheny, Pa.: Represented by J. F. Ball, H. E. Roemhild and C. E. Williamson.

BELKNAP HARDWARE & MFG. COMPANY, Louisville, Ky.: Represented by J. M. Summers.

BILLINGS-CHAPIN COMPANY, Cleveland, Ohio: Represented by E. A. Yeomans and Wm. Hamilton.

DELAVAL SEPARATOR COMPANY, New York: Represented by A. W. Fletcher.

HANNA PAINT MFG. COMPANY, West Chester, Pa.: Represented by N. M. Hooker and M. B. Fisher.

JAMES C. LINDSAY HARDWARE COMPANY, Pittsburgh, Pa.: Represented by W. G. McMurray and W. G. McMurray, Jr.

GLIDDEN VARNISH COMPANY, Cleveland, Ohio: Represented by C. Cathcart.

PENNSYLVANIA PAINT & GLASS COMPANY, Pittsburgh, Pa.: Represented by M. E. Howe.

ROBESON CUTLERY COMPANY, Rochester, N. Y.: Represented by D. A. Jack.

REMINGTON ARMS COMPANY, Ilion, N. Y.: Represented by D. W. Goshorn.

SOUTH BEND MALLEABLE RANGE COMPANY, South Bend, Ind.: Represented by E. A. Ridgeway.

STOVE & RANGE COMPANY OF PITTSBURGH, Pittsburgh, Pa.: Represented by M. M. McDonald and H. M. Baldwin.

SIMONDS MFG. COMPANY, Fitchburg, Mass.: Represented by William L. Mayer.

SHARPLES SEPARATOR COMPANY, West Chester, Pa.: Represented by George H. McKee.

UNION METALLIC CARTRIDGE COMPANY, Bridgeport, Conn.: Represented by D. W. Goshorn.

Convention Notes.

A telegram of congratulation and good wishes was received during the Thursday afternoon session from the Illinois convention, in session at Springfield.

A pleasant prelude to the opening of the Thursday afternoon session was the singing of J. A. Bollman of Iowa, who subsequently made an instructive address on the subject of salesmanship.

George Byrne of Charleston, who was introduced as the W. J. Bryan of West Virginia, made an interesting address at one of the sessions in which he discussed the subject of advertising and emphasized its great importance to the Hardwareman, especially in view of the mail order competition which he was obliged to contend with.

An enjoyable feature of the convention was a visit to the extensive plant of the Kelly Axe Mfg. Company on Wednesday. Special cars were furnished and the visitors conducted to the big plant under the guidance of W. B. Lockett, manager of the sales department. Arriving at the plant, they sat down to a splendid luncheon and after a few welcoming remarks by W. C. Kelly, president of the company, to which Mr. Frye, president of the association, appropriately responded, the visitors were taken through the different departments of the factory. The party numbered about 200 persons.

ADDRESS OF PRESIDENT FRYE.

T. B. Frye, Keyser, president of the association, in his annual address referred in an interesting way to the birth and development of the association, paying tribute to the part taken by the traveling men in co-operating with it. The remainder of his address was substantially as follows:

Since our last meeting we have added materially to our number and at this time we have over 80 members, besides about 50 honorary members. While our growth has not been as rapid as we would have desired, it has been steady and encouraging. Still we are not satisfied. We think that every one of the 250 retail Hardware merchants in West Virginia should be members of this organization. The banding together of the Hardware merchants certainly has been beneficial to the members, and it has also benefited the merchants who do not belong to this association.

The Nonaffiliated Merchant.

This hardly seems fair, and if we could only reach these men in some way and get them to realize this fact I am sure they would join us. I believe as a rule the Hardwareman is too broadminded to want to receive benefits from the workings of any association unless he can be identified with it, and do his share of the work. He is too big to want something for nothing, and just as soon as these men who are now holding back realize what a great work we are doing, and what an advantage it is to belong to our association, they will hasten to join us. The time is coming nearer every day when they cannot help but see it, and I firmly believe that by the time this association is 10 years old every retail Hardware merchant in West Virginia will be a member of it.

The social advantages alone to be derived from our association are a great inducement to become a member. The coming together once a year from all over our State of men whose interest and aims are one, broadens our views and promotes a feeling of good fellowship. Delightful friendships are formed and competitors in business from the same town can go home with better feelings toward each other and work together with greater harmony.

Parcel Post a Very Live Question.

There are doubtless many, and possibly some of our own members who think the parcel post subject has been worn out, who have become tired of reading of it, and who apparently show little interest in it. They make a very grave mistake in assuming such an attitude. It is a very live subject notwithstanding that the House Committee has rejected the rural parcel post project for the time being. It cannot be overlooked or neglected for a single week or day.

The catalogue people will never cease fighting for a law that will enable them to send their goods through the mails at the expense of the Government and to the detriment and ruination of untold thousands of merchants. They do not rest day nor night. They are reaching out in every way that is possible to accomplish their purpose. They are ever watchful for their opponent to tire of the fight and rest secure. There should be no such thing as lingering or resting on the part of those opposed to a parcel post. Every rural merchant or dealer should certainly see to it that his Congressman and local paper understand that he is first, last and all the time opposed to a parcel post, and that he will not endorse any man who favors it.

Opposition Should Not Let Up.

If the rural dealers generally would think enough about the matter to write to their Congressman on the subject, the danger would be over for a time at least. There are many who while opposed to such action on the part of the Government simply neglect to do what they can. It is all right to attend the convention and pass resolutions against this move, but that should not end it. Each member on returning to his home ought to constitute himself a committee of one to keep up the fight, and do all in his power against this movement, which if enacted into law will bring about results that will prove to be very disastrous to untold numbers.

The Farmer's Best Friend.

The free rural delivery is probably a good thing for the farmers as it now stands, although there may be cases where it is overdone, but such instances are rare, and this is a big country. However, adopting a parcel post certainly is not going to decrease the Post Office Department's deficiency but rather largely increase it, and at the same time ruin thousands of country merchants without whom the farming community would be in a bad plight indeed. Such dealers are the farmers' best friend. They buy the farmers' products, either in small or large quantities, and they can in return buy about what they want from the small town or country merchants, generally just as cheap as the catalogue houses would sell them, and at the same time the purchaser sees and knows just what he is getting.

What would it avail a farmer to save a few cents or even a few dollars on some one article, securing something probably of an inferior quality, and at the same time see his town merchant who buys all his small truck obliged to go out of business? The farmers themselves ought to be the most zealous opponents of parcel post and to take a decided, active stand in the fight against it.

Business Conditions and Prospects.

Now a few words in regard to trade conditions. It is useless to look backward upon the last year and dwell upon it, as we all know it has been one of great depression. But rather let us look forward, hoping for better things in the future. I do not think the year 1909 will go down in history as a busy year and one in which much money will be made, but rather it will be a year of readjusting and settling back to normal conditions, as for some time we have been going at too rapid a pace.

There are already indications of an improvement in business, and it is the expression of many competent and capable business men who are in a position to know, that the new year will bring satisfactory returns in the volume of business, although things will be apt to move along slowly in the early part until greater confidence is felt.

However, we hope and believe that the year 1909 will be the best and most prosperous in the history of our asso-

ciation. There is one way to make it so, and that way is for each member to put his shoulder to the wheel and to do all in his power to promote the good and growth of our organization.

SECRETARY HAWKER'S ANNUAL REPORT.

The report of Leslie Hawker, Shinnston, the efficient secretary of the organization, was in part as follows:

In this, our second annual report, we wish first to call your attention to the necessity of increasing our membership as our strength and influence as an association depends very largely on our membership.

Membership.

At our meeting at Elkins one year ago, we had 61 members. Four of these have dropped out from various reasons, leaving us at the beginning of the year with 57 members. We now have 85 out of a possible 250. I would like to urge our members each to make a strong personal effort, and consider himself a committee of one to make a special effort in the next few weeks to encourage his fellow merchants to join the association. We appreciate very much the fact that a number of traveling men have been very earnest in their work in behalf of the association, and have materially assisted the secretary as well as the association in a number of ways, and they are ever ready to speak a good word for the association, realizing that their interest and our own are inseparable. But we believe a strong personal letter from the influential merchants to nonmembers would have much influence, and would aid very materially in increasing our membership. Also if the various members realized the encouragement and assistance their letters, as well as their suggestions, give the officials, more of them would write. It is your association, your convention, and its officers are your servants, and execute your demands.

It is very hard for the secretary to secure and maintain a correct list of eligible members. Many times there is a change or a new store and some member is aware of it, yet fails to notify the secretary, thus causing much loss of time and trouble which could have been avoided.

Trade Paper Influence.

Many business men are skeptical of the value of organizations, and we believe this is largely due to the fact that they do not carefully read their trade papers. However, we believe the time is not far distant when they will realize that organization and co-operation are essential in solving the many perplexing problems that are confronting the retail merchant, and when the people who are now the recognized leaders of this movement, and who are devoting much valuable time and energy in promoting such organizations will receive their just and merited recognition as real, progressive business men, which they are.

A Suggestion as to Letterheads.

We would suggest that each member of the association have printed on his letterheads "Member of W. V. R. H. A." "Member of N. R. H. A." This we believe would be productive of beneficial results, and would also be a reminder, and would assist in keeping alive to the responsibility as a member and help to keep up enthusiasm. Almost any member is a good one during convention, and we would that more of them would get away from the humdrum of business and take a pleasant and profitable vacation of a week and attend our meetings, but enthusiasm during the remainder of the year is indispensable to a successful association.

Local Organizations Are Beneficial

and assist in promoting a better understanding of what the association is doing for them. Talk matters over with your competitor, and find out that he is not so mean as you thought. Frequently you can buy to advantage by buying together. Also many local organizations maintain a list of those who do not pay their bills and keep each other posted to the discomfort of the professional "dead beat."

We are glad to note that a number of our members have taken out mutual insurance since our last meeting, but am rather surprised at the number who are entitled to this feature who have not availed themselves of it.

Indiscriminate Selling by Jobbers and Manufacturers.

Complaints the past year have been very few, which should be gratifying not only to merchants, but to jobbers and manufacturers as well. The most serious complaints we have had have been in regard to the indiscriminate selling by manufacturers and jobbers to others than the regular Hardware merchants, thereby working an injustice to the legitimate trade, but we believe that by broadening our association and with an increased membership we will in a short while be able to reach a better understanding with these offending manufacturers and jobbers, whereby this class of selling will be reduced to a mimimum.

Business Conditions in General

are improving. Farmers are in a prosperous condition, and will need the customary amount of staple goods for their requirements. The prospects are that by early spring the usual amount of building will be commenced, and every department of business, save possibly in sections where local conditions hinder, will assume a healthy and normal condition, and we predict that the year 1909 will at least be an average year to the retail Hardware merchant, if not one of his very best, if he devotes the proper time and energy to it, which is essential to the successful conducting of any business.

Mr. Hawker, as treasurer, reported a balance on hand with all bills paid of $100.23. This amount does not include the collections during the meeting or the receipts from advertising in the convention programme.

REFLECTIONS OF A TRAVELING MAN.

A very interesting and suggestive paper entitled "Reflections of a Traveling Man," was read by Wm. M. Lake, Marietta, Ohio. The paper was substantially as follows:

The man who succeeds on the road to-day is the man who "likes his job." One night last week, coming out of Wheeling, I sat in the smoker with a fellow traveling man. He talked rather freely with me of the inconveniences—the poor accommodations of the hotels—the exposure of long drives, and wound up by saying, "It's a dog's life. I have been on the road for 10 years, and all I have ever gotten has been a bare living. I am tired of it all, and this will be my last trip."

"My friend," I said, "it is not a dog's life, but a man's life, and calls into play all the best instincts of a man. The fault lies not with the calling, but with yourself. You have looked at life through smoked glasses, and your vision became blurred. The enthusiasm you should have carried into your work you wasted at the ball game. You awake with a grouch, and wonder why no glad hand is extended to you. You say you have been on the road for 10 years, and all you have received has been a bare living. My friend, I have been on the road twice 10 years, and there has never been a moment during that time when I felt I wanted to quit. The friendships I have formed during that time I consider of greater value than a fat bank roll."

It is a recognized fact of law that good will forms a real tangible asset to any business, and the friendships of a salesman are as much an asset and more dependable than the average banking security.

Salesman's Interest in Merchant.

The salesman is vitally interested in your success. His interest does not cease when he has sold you a bill of goods. He has only done half his duty when the sale is made, and his work is not completed until he has helped you, by suggestion and otherwise, to dispose of your stock on hand.

Look back over your career and find how often an idea of his has brought money and trade to you. He is in constant touch with the evolution of trade—he watches the successful methods of others, the selling schemes of some distant city that brought a revenue; this is yours for the asking. Meet him half way—tell him your troubles, the competition you have to meet, your plans for the future.

Depend upon it, your confidence will be respected, and in return you will receive helpful advice. The advances along this line should, however, come from you. It is the duty of the patient to go to the doctor—not the doctor to seek the patient. If your business is in an unhealthy condition, talk it over with your friend, the salesman. He will give you sound advice, and you will never be troubled with a bill for professional services.

Push, Don't Knock.

I called on a friend in the downtown district the other day, and on the swinging door leading into his office I noticed a little white enameled sign with black lettering that read: "Push! Don't Knock!"

Gentlemen, I want you to take that as your motto for the current year: "Push! Don't Knock!" Push the town you live in, push forward the clerks who help you in your business—push your fellow tradesmen, and take a vital interest in the affairs of your community. Forget the petty prejudices that cause you to look upon your competitor as an enemy. The man across the street is not a bad fellow when you get to know him. Notwithstanding the old Biblical injunction, "Knock, and it shall be opened unto you," the world to-day has little use for the "knocker." We are growing broader-gauged; a national trade uplift is going on.

When you are in the game, play it, and play it hard—but play it on the level. Let us have no off-side plays. The rules of the game are stricter, the rewards greater, but an umpire called Public Opinion will rule you out of the game at the first attempt at tricky play.

Salesmen of To-Day and 10 Years Since.

With all due reverence for the knights of the road who are dead and gone, I believe that the salesmen of to-day, as a body, are more intelligent, more thorough in their work, more loyal to the best interests of the dealer than were the salesmen of a decade ago. The law of progress calls for a higher standard of business ethics. The practices that were in vogue then would not be tolerated now.

The work you have accomplished in the past five years

in eliminating unjust competition has been truly marvelous, but I believe you will agree with me when I say that in all stages you have had the loyal support of the traveling salesmen. He is your friend, loyal, and true to you, not alone for the orders he receives, which are welcome, but because he likes the game, the enthusiasm that goes with conflict, the excitement of the battle, and incidentally because he realizes your success means his success.

Ohio Hardware Association.

(By Telegraph.)

UNDER circumstances and amid surroundings which have become familiar but none the less appreciated, the fifteenth annual convention of the Ohio Hardware Association met on Tuesday, 23d inst., in Columbus. Of the previous conventions of this organization no less than eight have been held in the Buckeye capital. Although marred by an incessant downpour of rain, this opening day measures fully up to the high standard which has been set on previous occasions.

The officers and committees in charge are to be congratulated on the smoothness and adequacy of arrangements, and the large attendance of members and guests who are scattered through the hotels of the city. The convention headquarters, at the Southern Hotel, the meeting place, at the auditorium of the Chamber of Commerce, and the Hardware show, at Memorial Hall, all afford their usual convenient and satisfactory accommodations.

At the opening session on Tuesday afternoon the invocation was pronounced by Rev. Washington Gladden, and an address of welcome was made by Governor Harmon. President A. L. Shearer, Dayton, appropriately responded for the association. Addresses followed by W. D. Moody, manager of the Chicago Association of Commerce, who spoke on organization in business, and E. F. Nefz, Chicago, who spoke on salesmanship. The convention committees were then announced.

In the evening an informal reception was given by the Hardware merchants of Columbus and the association jointly to the members and their ladies, the exhibitors, traveling men and other guests. The affair was arranged by a committee headed by O. L. Davis, Smith Bros. Hardware Company, Columbus, and in spite of very inclement weather was enjoyed by a large gathering.

THE CAMPBELL IRON COMPANY, St. Louis, Mo., has contracted with the Chapline Realty & Construction Company, St. Louis, Mo., for the erection of two three-story and basement warehouses, 41 x 134 ft. each, and one two-story warehouse to cover the same ground area, work on which is now progressing at 809-819 Cass avenue, under J. M. Dunham, architect. Windows on exposed sides will be of metal frame and wired glass, walls and floors of heavy construction, openings protected by fire doors and equipped with electric elevators. The improvements will represent an outlay of about $75,000, and in a few months the management expect to be carrying a full stock of Iron, Steel Heavy Hardware and supplies for blacksmiths, wagonmakers, horseshoers, merchants, contractors and kindred users.

THE WRIGHT-THIFFAULT COMPANY, 101 East Kinzie street, Chicago, Ill., has just sold its business to the McVoy Sheet & Tin Plate Company, comprising its entire stock of Tin Plates (Coke, Charcoal and Ternes), Galvanized Sheets and all other sheet metal goods. Charles G. Warren, vice-president of the Wright-Thiffault Company, will represent the McVoy Sheet & Tin Plate Company.

THE BURNS, SILVER & CO., Bridgeport, Conn., on February 19, changed its corporate name to the Burns & Bassick Company, being a change in name only, with no change of stock holdings or officers, it is said. The company manufactures Drawer Pulls, Knobs, Escutcheons, Brass and Bronze Castings and Brass and Bronze Specialties, and has recently increased its factory buildings and manufacturing facilities.

CONTENTS.

NEW YORK RETAIL HARDWARE ASSOCIATION.

The retail Hardware merchants of New York have never held a more satisfactory convention than that which concluded last Friday. In attendance, in the enjoyableness of the entertainment features, and especially in the interest and profit of the business sessions, there was ground for satisfaction and congratulation. While the membership rolls do not grow as rapidly as might be hoped, there has been a healthy growth during the year and great progress in all directions has been made since the association last met in Rochester five years ago. The accommodations afforded by this fine, enterprising city, which is the home of many manufacturers serving the Hardware trade, and the liberal hospitality of its loyal and public-spirited citizens in all branches of business, whose rallying cry is, "Do it for Rochester," left nothing to be desired.

The first day of the convention, and the opening session, reported in our last issue, were interfered with by a severe storm, which delayed the arrival of many members. On the second day, however, and thereafter, the weather was good. A good crowd was on hand for both the Wednesday and Thursday sessions, which were of a most interesting and valuable character. At the Friday session the attendance was considerably reduced by the departure of many members for their homes, which was much regretted, as this meeting was given up almost entirely to the Question Box and developed discussions of practical problems met by every Hardware merchant.

Legislation.

A report was rendered by the Committee on Legislation telling what had been done to keep the members posted during the year regarding proposed legislation, at the same time suggesting what action might best be taken to protect their interests. Particular importance is attached to the present movement in the State to secure the repeal of the garnishment law, a movement to which all mercantile interests are vigorously opposed. Geo. S. Hughes, Utica, of the Merchants' Legislative League, gave a talk on this subject, explaining the various aspects of the law and the situation at some length, and answering many questions put to him by members.

Opposition was also expressed to a bill prohibiting the sale of Revolvers and Cartridges for same to persons not having a license to carry a Revolver. The ground was taken that such a law would deprive the trade of a large and profitable portion of their business and would clearly favor merchants in other States, who could sell this class of merchandise to residents of New York without violating any law.

Organization.

As the incorporation of the association has been effected during the past year, matters relating to organization required considerable attention. A meeting was held to wind up the old association, and several changes were made in the present constitution as recommended by C. E. Wethey, Port Byron, chairman of the Organization Committee, which had acted under competent legal advice. Perhaps the most important change was the provision for an Advisory Board, consisting of ex-presidents, to advise with the president and other officers, and have charge of any special funds, such as income derived from exhibits.

Reports of Secretary and Treasurer.

Secretary J. B. Foley made a brief report of his work during the year, the principal feature being the addition to the membership of about 50 new names. Unfortunately, the association has not grown by this entire number, as quite a few names have been dropped for non-payment of dues.

F. E. Pelton, treasurer, made a detailed report of receipts and expenditures, showing the finances of the association to be in satisfactory condition.

Parcel Post.

The subject of parcel post was introduced by President Bradish in his annual address, and also by Secretary Corey of the National Retail Hardware Association. Nothing was brought out in this connection with which readers of *The Iron Age* and its reports of recent conventions are not already familiar. Special interest was added to the discussion by the receipt of a dispatch, stating that the Post Office Appropriation bill had been reported, embodying an amendment providing for an experimental parcel post on a few rural routes. It was voted to send a telegram to the New York Senators urging them to oppose the measure. Before the close of the convention, however, it was learned that the amendment had been quashed, as noted in the letter of our Washington correspondent given on another page.

A. STEWART.

C. E. WETHEY.

J. B. FOLEY.

Resolutions.

The Committee on Resolutions reported the usual complimentary and appreciative resolutions which were adopted. A resolution was also adopted expressing the sentiment of the association that manufacturers of galvanized ware or other sheet metal ware, wooden ware, &c., should refrain from selling grocers, the ground being taken that these were strictly Hardware lines.

Address of F. Alexander Chandler.

The attendance at the convention of F. Alexander Chandler, Boston, a prominent member of the New England Association and a director of the National Association, was greatly appreciated. Mr. Chandler is an intelligent and enthusiastic association worker and an ex-

cellent speaker. He delivered an able and thoughtful address at the Thursday session which was substantially as follows:

It seems to me in carrying on this association work that our associations are formed for co-operation, agitation or segregation. I think that our work has combined, perhaps, the first two of these points. I think the co-operative idea of association work will continue to give us the strength we desire and need to keep us in the field. The originators of the association work had considerable difficulty in getting representative men from the different towns. There was that feeling of, "Well, if Smith goes in, that will be enough for this town; they won't want me," not as the friendly competitor, but the bound-to-be-enemy. So that the original workers in Hardware and other association fields had that to contend with.

As we got into it a little further we had in particular the idea that the organization was being developed as a segregrated body for a chosen few, and if a man didn't have as big investment as another he would not be recognized, that he would be simply a tailender, and so he said: "I'll wait until they get more of the little fellows in." Those were largely the questions which the original workers had to contend with, and they had hard work to maintain the interest year by year.

One for All and All for One.

If we go at association work on broad lines, as I understand it is intended, the greatest good for the greatest number, we will find more of interest to all of us, and I think we have eradicated this spirit of dissension and bad feeling toward one another. Of course, the issues which we meet in association work are radically different in some sections, and therefore our experience in New England may not be the same as yours. But all of us meet the unscrupulous contractor, and if we are friendly with our competitor we don't like to see him stung, and we say to him: "So-and-so is a good man to let alone." So that I say the association in the way of exchange of credit memorandums is of inestimable value.

Then there is the matter of uniformity of prices. Probably all of you have had a customer come in and say, "John, I have got to cut you out; Tom will give me a better price." If you are right and feel sure that you are, call up your competitor and find out whether your customer is misrepresenting the situation. I do not think we want to have in our association any man who is not a clean competitor. If we have a man who pursues methods in our association which we do not think are methods which our association stands for, have a committee call his attention to these facts. This will many times correct the fault. If you find jobbers selling in a way menacing to the retail trade, make your complaint to him before you cut him off your list.

Opportunities for Progressive Work.

Then through the State Association a great deal can be accomplished by the Legislation Committee. Good roads, for example, and other State legislation bearing directly on the Hardware trade. Then from the State into the National Association and we find general subjects of interest.

It seems to me the first question asked us when we approach a man and ask him to become an association member is, "What am I going to get out of it?" The first thing he wants to know is what direct benefit he is going to derive. On that score we no doubt point to the mutual insurance, which has been worked out to be not only a very good thing, but a very wholesome way of binding the trade together. And so all of us can answer a question of that sort with a good reply.

But do not lose track of the more abstract policies which we have to offer a prospective member. We must have the issues, ultimate results and ambitions so broad and so highly aimed that we will at all times have a goal and something to work for worthy of every individual member and worthy of the support of all persons not as yet members of our fold. It seems to me that in getting at the issues and making resolutions in our conventions we must be careful that the issues are not grasped at and the resolutions snapped up on immature judgment. To my mind a vote on a resolution on some broad issues as the postal revision with which we are not fully acquainted might better be stricken from the records of the meeting. I hope your officers in the future will have that judgment to advise you not to overstep the best interests of your association by making snap judgments on something on which you are not fully posted and not be in a very embarrassing position by which afterward you might wish it had been left undone.

Association Work a Labor of Love.

Now, in the matter of association officers and their work. With almost no exceptions the officers of every State association are unpaid men; busy Hardwaremen doing the work as a labor of love. These men take their office both as an honor and with the desire of pushing forward the work. In order to accomplish the best results, they need and desire the support and wholesome interest of every man in the association.

If we are going to have a strong association we must build it up by strong individual effort. Our individual efforts are just as material and just as important in the national association of which we are members as the individual vote of the citizen of the United States is in our great and grand government.

Obligations to the Trade Press.

In order to accomplish the work we must give considerable time and thought to the issues. In the preparation of this work we cannot give too much attention to the assistance which has been given us by our friends of the trade press. I see with us this afternoon a number of our friends in whose pages, both reportorially and editorially, the Hardware associations have received courteous treatment. Look at it in the broad sense. Any of us who know anything about newspaper work have to concede the fact that the reading columns do not furnish revenue for their support.

These trade papers give us unbiased judgment and criticisms from any standpoint whatsoever and have helped us build up our association, and I think we ought to recognize this and at least give them a vote of thanks. By reading the trade papers, National Bulletin, or all of them, you will find that the issues throughout the country are in many instances similar, and in that way we keep posted more closely, and by following them up where a letter is desired and sent promptly we can aid the association work of the country.

Hardware Exhibitions.

Now regarding the different forms of State conventions: Some have closed sessions and Question Box discussions; others eliminate the exhibition feature of it, which to my mind is an important detail of the work. Some characterize it as a "hold-up" on the manufacturer. I believe if the manufacturer has something legitimate to show us we are perfectly fair in offering him the opportunity to show it. If a manufacturer can come here and strike two or three hundred dealers and introduce a good line, perhaps a new one, there is no better way he can reach those busy dealers on one expense account. I hope in appreciation of his courtesy we will bring our order books with us and look over the list of those here represented before buying, so that we can show a concrete appreciation of their being with us.

We will find in every community the Hardwareman and his family stand as high as any of our professional brothers. A man cannot go into the Hardware business and amount to anything in two or three years. It takes years of experience to run a first-class Hardware store. It takes years to

F. E. PELTON.

J. H. BRADISH.

LOUIS ERNST.

learn how to conduct new lines. Some of us carry absolutely nothing in the way of household goods, Washing Machines, nevertheless, we have to recognize the man who has Kitchenware, Willowware, &c., and yet in a broad way we are all Hardwaremen, meeting together in a friendly spirit under this broad association and honorable name of Hardware.

Results of Association Effort.

The association effort is doing a lot of good throughout the country. We have but to look about us and realize that the association movement is accomplishing great work in other lines than Hardware. Take, for instance, the tenement house crusade, insisting on lighted rooms, good ventilation, proper fire escapes—an earnest effort to stamp out tuberculosis. In the National exhibit held at Philadelphia they had a device to impress upon the public the deaths from consumption, a bell rang and a light flashed every 2 minutes and 43 seconds, showing that in every 2 minutes and 43 seconds there was a death from consumption. The doctors have pointed out that much of this tuberculosis can be stamped out by the elimination of windowless rooms, and to a greater extent the evil of expectorating broadcast.

While public opinion has started such crusades and so entirely for general and public good, we in our National Association work are accomplishing a work for the benefit of the general public. What seemed to me a very important act through our association on this matter of parcel post was taken up in Philadelphia on Saturday, when a committee of eight of us called on Senator Penrose and after a conference with him, retired with the assurance that we had him with us to a considerable extent on the parcel post question.

Speaking from the standpoint of my own house, I would like to see parcel post come; we could make money. But neither my partner nor myself believe it is for the best interests of the public at large. We can get some idea of how it would work out when we think of the overcrowded condition of the mails at Christmas time. Even on Valentine's Day those little paper missives held the mails up for several hours. Furthermore, there is no just reason why the Government, why the postal department should undertake this extra service when it cannot be expected to be self-supporting. It seems to me the parcel post matter is one that we must not let slide through without the earnest individual effort of each of us.

If you will take from me, representing the National Association, the suggestion that we keep on in this co-operative spirit of association; everybody working to know one another better; willing to hear reports and complaints which we have against them; look upon the trade press as our friends; look upon our association officers as men needing our individual support; look more deeply into the principles your association stands for and then work accordingly, if you will follow my suggestion you will build up an association to be proud of.

Election of Officers.

The following officers were elected for the ensuing year:

PRESIDENT, A. E. Towne, Saratoga.
FIRST VICE-PRESIDENT, A. Stewart, Ft. Plain.
SECOND VICE-PRESIDENT, C. E. Wethey, Pt. Byron.
SECRETARY, J. B. Foley, Syracuse.
TREASURER, F. E. Pelton, Herkimer.
DIRECTORS: J. H. Bradish, Batavia; A. F. Miller, Olean; F. J. Houk, Owego; F. W. Stevens, Oneonta; C. E. Eisele, Buffalo; William Fowler, White Plains.
DELEGATES TO NATIONAL CONVENTION: J. H. Bradish, Batavia; J. B. Foley, Syracuse; J. G. Ferres, Johnstown; A. E. Towne, Saratoga; L. J. Ernst, Rochester.

Address of R. R. Williams.

R. R. Williams, Hardware editor of *The Iron Age*, was called upon to address the convention Thursday afternoon. His remarks were of a congratulatory and suggestive character. Mr. Williams has from the first been an active member of the association, and, carrying its credentials, has visited almost every State organization in the country. He referred especially to his recent visits to the State associations of Georgia, the Carolinas, Texas and Oklahoma, to whose merchants he paid high tribute. He referred warmly to his relations with the New York body, both individually and collectively. He brought out forcibly the dignity of a business life and suggested the happiness and inspiration which might be enjoyed by a merchant who learned to regard his work as a high calling. Touching on association work, he pointed out the opportunities for progress and growth. Without minimizing the value of organized activity, he declared that the greatest benefits from the associations were those received by the merchants individually as they learned from other merchants and were enabled with broader views and enlarged information to carry on their business in a fraternal spirit and with up to date methods.

Entertainment.

The smoker given by the local jobbers and manufacturers on Wednesday evening was an occasion of good fellowship that will long be remembered. It was held in a large department store restaurant which for the occasion answered all the purposes of a club and was an affair of wide open hospitality participated in by between 600 and 700 guests. While thanks and appreciation were due to all the hosts special mention should be made of J. H. Boucher, Mathews & Boucher, for his large part in promoting the affair, and of L. S. Foulkes, Rochester Stamping Company, who played the part of master of ceremonies with inexhaustible energy, tact and rare good humor. First rate music was furnished by a large orchestra, which played with tireless spirit for the singing of popular and patriotic airs. Everybody sang, the words of more than a dozen songs being attractively printed for the occasion. Then there was vaudeville by good performers, followed by wrestling and boxing. Every one voted this smoker one of the best that he had ever attended.

The hosts included Mayor Edgerton, Edward G. Miner, president, Chamber of Commerce; S. R. Clarke, secretary, Chamber of Commerce, and the following Rochester manufacturers and jobbers:

Atlantic Stamping Co.
Barnard, Porter & Viall.
Boutell Mfg. Co.
Caldwell Mfg. Co.
Wilmot-Castle Co.
Clark Paint & Oil Co.
Co-operative Foundry Co.
Enterprise Foundry Co.
Follansbee Bros. Co.
Galusha Stove Co.
C. T. Ham Mfg. Co.
Howe & Rogers Co.
Hunting Co.
Huther Bros. Saw Mfg. Co.
Mack & Co.
Mathews & Boucher.
F. B. Pease & Co.
Phillips & Clark Stove Co.
Pritchard-Strong Co.
Pullman Mfg. Co.
Puritan Soap Co.
Robeson Cutlery Co.
Rochester Rubber Co.
Rochester Lead Works.
Rochester Non-Rust Tinware Co.
Rochester Stamping Co.
Sill Stove Works.
Samuel Sloan & Co.
Star Egg Carrier & Tray Mfg. Co.
Taylor Instrument Co.
Weaver, Palmer & Richmond.

The banquet Thursday evening at the Seneca was a delightful occasion. The *menu* was excellent, there was good music, and the speaking was of a high order. President Bradish introduced as toastmaster S. R. Clarke, secretary of the Rochester Chamber of Commerce, who gracefully presented the following speakers: Ex-State Senator W. W. Armstrong, F. Alexander Chandler, Boston; A. E. Sutherland, Justice of the Supreme Court, and R. R. Williams, *The Iron Age*.

Mr. Armstrong's good natured raillery of his friends in the Hardware trade aroused much laughter. Mr. Chandler spoke of the felicitous change in convention habits and spirit as represented by the presence of the ladies, concluding with an amusing tale which he gravely referred to as occurring on his trip to Rochester with Mrs. Chandler.

The address of Judge Sutherland will long be remembered by those who heard it. He pointed out the great improvement which has come about in business habits and standards as reflected by the development of the law particularly as applied to purchases and sales of merchandise. He declared that personality and reputation are steadily becoming more and more important as factors in business success and advised all merchants who were incorporating their business to give a personal name. Although directed in a serious, thoughtful vein, Mr. Sutherland's address also abounded in humor, his numerous appropriate Scotch stories being especially enjoyed. R. R. Williams was the closing speaker, and the banquet concluded with the singing of "Auld Sang Lyne."

QUESTION BOX.

The Question Box was in charge of a committee consisting of L. G. Mattison, Newark; G. A. Tuttle, Palmyra, and A. E. Marshall, Lyons. At the Thursday session it was conducted by Secretary Corey of the National Association, and at the closing session by Mr. Mattison. The

cellent speaker. He delivered an able and thoughtful address at the Thursday session which was substantially as follows:

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One for All and All for One.

If we go at association work on broad lines, as I understand it is intended, the greatest good for the greatest number, we will find more of interest to all of us, and I think we have eradicated this spirit of dissension and bad feeling toward one another. Of course, the issues which we meet in association work are radically different in some sections, and therefore our experience in New England may not be the same as yours. But all of us meet the unscrupulous contractor, and if we are friendly with our competitor we don't like to see him stung, and we say to him: "So-and-so is a good man to let alone." So that I say the association in the way of exchange of credit memorandums is of inestimable value.

Then there is the matter of uniformity of prices. Probably all of you have had a customer come in and say, "John, I have got to cut you out; Tom will give me a better price." If you are right and feel sure that you are, call up your competitor and find out whether your customer is misrepresenting the situation. I do not think we want to have in our association any man who is not a clean competitor. If we have a man who pursues methods in our association which we do not think are methods which our association stands for, have a committee call his attention to these facts. This will many times correct the fault. If you find jobbers selling in a way menacing to the retail trade, make your complaint to him before you cut him off your list.

Opportunities for Progressive Work.

Then through the State Association a great deal can be accomplished by the Legislation Committee. Good roads, for example, and other State legislation bearing directly on the Hardware trade. Then from the State into the National Association and we find general subjects of interest.

It seems to me the first question asked us when we approach a man and ask him to become an association member is, "What am I going to get out of it?" The first thing he wants to know is what direct benefit he is going to derive. On that score we no doubt point to the mutual insurance, which has been worked out to be not only a very good thing, but a very wholesome way of binding the trade together. And so all of us can answer a question of that sort with a good reply.

But do not lose track of the more abstract policies which we have to offer a prospective member. We must have the issues, ultimate results and ambitions so broad and so highly aimed that we will at all times have a goal and something to work for worthy of every individual member and worthy of the support of all persons not as yet members of our fold. It seems to me that in getting at the issues and making resolutions in our conventions we must be careful that the issues are not grasped at and the resolutions snapped up on immature judgment. To my mind a vote on a resolution on some broad issues as the postal revision with which we are not fully acquainted might better be stricken from the records of the meeting. I hope your officers in the future will have that judgment to advise you not to overstep the best interests of your association by making snap judgments on something on which you are not fully posted and not be in a very embarrassing position by which afterward you might wish it had been left undone.

Association Work a Labor of Love.

Now, in the matter of association officers and their work. With almost no exceptions the officers of every State association are unpaid men; busy Hardwaremen doing the work as a labor of love. These men take their office both as an honor and with the desire of pushing forward the work. In order to accomplish the best results, they need and desire the support and wholesome interest of every man in the association.

If we are going to have a strong association we must build it up by strong individual effort. Our individual efforts are just as material and just as important in the national association of which we are members as the individual vote of the citizen of the United States is in our great and grand government.

Obligations to the Trade Press.

In order to accomplish the work we must give considerable time and thought to the issues. In the preparation of this work we cannot give too much attention to the assistance which has been given us by our friends of the trade press. I see with us this afternoon a number of our friends in whose pages, both reportorially and editorially, the Hardware associations have received courteous treatment. Look at it in the broad sense. Any of us who know anything about newspaper work have to concede the fact that the reading columns do not furnish revenue for their support.

These trade papers give us unbiased judgment and criticisms from any standpoint whatsoever and have helped us build up our association, and I think we ought to recognize this and at least give them a vote of thanks. By reading the trade papers, National Bulletin, or all of them, you will find that the issues throughout the country are in many instances similar, and in that way we keep posted more closely, and by following them up where a letter is desired and sent promptly we can aid the association work of the country.

Hardware Exhibitions.

Now regarding the different forms of State conventions: Some have closed sessions and Question Box discussions; others eliminate the exhibition feature of it, which to my mind is an important detail of the work. Some characterize it as a "hold-up" on the manufacturer. I believe if the manufacturer has something legitimate to show us we are perfectly fair in offering him the opportunity to show it. If a manufacturer can come here and strike two or three hundred dealers and introduce a good line, perhaps a new one, there is no better way he can reach those busy dealers on one expense account. I hope in appreciation of his courtesy we will bring our order books with us and look over the list of those here represented before buying, so that we can show a concrete appreciation of their being with us.

We will find in every community the Hardwareman and his family stand as high as any of our professional brothers. A man cannot go into the Hardware business and amount to anything in two or three years. It takes years of experience to run a first-class Hardware store. It takes years to

F. E. PELTON.

J. H. BRADISH.

LOUIS ERNST.

learn how to conduct new lines. Some of us carry absolutely nothing in the way of household goods, Washing Machines, nevertheless, we have to recognize the man who has Kitchenware, Willowware, &c., and yet in a broad way we are all Hardwaremen, meeting together in a friendly spirit under this broad association and honorable name of Hardware.

Results of Association Effort.

The association effort is doing a lot of good throughout the country. We have but to look about us and realize that the association movement is accomplishing great work in other lines than Hardware. Take, for instance, the tenement house crusade, insisting on lighted rooms, good ventilation, proper fire escapes—an earnest effort to stamp out tuberculosis. In the National exhibit held at Philadelphia they had a device to impress upon the public the deaths from consumption, a bell rang and a light flashed every 2 minutes and 43 seconds, showing that in every 2 minutes and 43 seconds there was a death from consumption. The doctors have pointed out that much of this tuberculosis can be stamped out by the elimination of windowless rooms, and to a greater extent the evil of expectorating broadcast.

While public opinion has started such crusades and so entirely for general and public good, we in our National Association work are accomplishing a work for the benefit of the general public. What seemed to me a very important act through our association on this matter of parcel post was taken up in Philadelphia on Saturday, when a committee of eight of us called on Senator Penrose and after a conference with him, retired with the assurance that we had him with us to a considerable extent on the parcel post question.

Speaking from the standpoint of my own house, I would like to see parcel post come; we could make money. But neither my partner nor myself believe it is for the best interests of the public at large. We can get some idea of how it would work out when we think of the overcrowded condition of the mails at Christmas time. Even on Valentine's Day those little paper missives held the mails up for several hours. Furthermore, there is no just reason why the Government, why the postal department should undertake this extra service when it cannot be expected to be self-supporting. It seems to me the parcel post matter is one that we must not let slide through without the earnest individual effort of each of us.

If you will take from me, representing the National Association, the suggestion that we keep on in this co-operative spirit of association; everybody working to know one another better; willing to hear reports and complaints which we have against them; look upon the trade press as our friends; look upon our association officers as men needing our individual support; look more deeply into the principles your association stands for and then work accordingly, if you will follow my suggestion you will build up an association to be proud of.

Election of Officers.

The following officers were elected for the ensuing year:

PRESIDENT, A. E. Towne, Saratoga.
FIRST VICE-PRESIDENT, A. Stewart, Ft. Plain.
SECOND VICE-PRESIDENT, C. E. Wethey, Pt. Byron.
SECRETARY, J. B. Foley, Syracuse.
TREASURER, F. E. Pelton, Herkimer.
DIRECTORS: J. H. Bradish, Batavia; A. F. Miller, Olean; F. J. Houk, Owego; F. W. Stevens, Oneonta; C. E. Eisele, Buffalo; William Fowler, White Plains.
DELEGATES TO NATIONAL CONVENTION: J. H. Bradish, Batavia; J. B. Foley, Syracuse; J. G. Ferres, Johnstown; A. E. Towne, Saratoga; L. J. Ernst, Rochester.

Address of R. R. Williams.

R. R. Williams, Hardware editor of *The Iron Age*, was called upon to address the convention Thursday afternoon. His remarks were of a congratulatory and suggestive character. Mr. Williams has from the first been an active member of the association, and, carrying its credentials, has visited almost every State organization in the country. He referred especially to his recent visits to the State associations of Georgia, the Carolinas, Texas and Oklahoma, to whose merchants he paid high tribute. He referred warmly to his relations with the New York body, both individually and collectively. He brought out forcibly the dignity of a business life and suggested the happiness and inspiration which might be enjoyed by a merchant who learned to regard his work as a high calling. Touching on association work, he pointed out the opportunities for progress and growth. Without minimizing the value of organized activity, he declared that the greatest benefits from the associations were those received by the merchants individually as they learned from other merchants and were enabled with broader views and enlarged information to carry on their business in a fraternal spirit and with up to date methods.

Entertainment.

The smoker given by the local jobbers and manufacturers on Wednesday evening was an occasion of good fellowship that will long be remembered. It was held in a large department store restaurant which for the occasion answered all the purposes of a club and was an affair of wide open hospitality participated in by between 600 and 700 guests. While thanks and appreciation were due to all the hosts special mention should be made of J. H. Boucher, Mathews & Boucher, for his large part in promoting the affair, and of L. S. Foulkes, Rochester Stamping Company, who played the part of master of ceremonies with inexhaustible energy, tact and rare good humor. First rate music was furnished by a large orchestra, which played with tireless spirit for the singing of popular and patriotic airs. Everybody sang, the words of more than a dozen songs being attractively printed for the occasion. Then there was vaudeville by good performers, followed by wrestling and boxing. Every one voted this smoker one of the best that he had ever attended.

The hosts included Mayor Edgerton, Edward G. Miner, president, Chamber of Commerce; S. R. Clarke, secretary, Chamber of Commerce, and the following Rochester manufacturers and jobbers:

Atlantic Stamping Co.
Barnard, Porter & Viall.
Boutell Mfg. Co.
Caldwell Mfg. Co.
Wilmot-Castle Co.
Clark Paint & Oil Co.
Co-operative Foundry Co.
Enterprise Foundry Co.
Follansbee Bros. Co.
Galusha Stove Co
C. T. Ham Mfg. Co.
Howe & Rogers Co.
Hunting Co.
Huther Bros. Saw Mfg. Co.
Mack & Co.
Mathews & Boucher.
F. B. Pease & Co.
Phillips & Clark Stove Co.
Pritchard-Strong Co.
Pullman Mfg. Co.
Puritan Soap Co.
Robeson Cutlery Co.
Rochester Rubber Co.
Rochester Lead Works.
Rochester Non-Rust Tinware Co.
Rochester Stamping Co.
Sill Stove Works.
Samuel Sloan & Co.
Star Egg Carrier & Tray Mfg. Co.
Taylor Instrument Co.
Weaver, Palmer & Richmond.

The banquet Thursday evening at the Seneca was a delightful occasion. The *menu* was excellent, there was good music, and the speaking was of a high order. President Bradish introduced as toastmaster S. R. Clarke, secretary of the Rochester Chamber of Commerce, who gracefully presented the following speakers: Ex-State Senator W. W. Armstrong, F. Alexander Chandler, Boston; A. E. Sutherland, Justice of the Supreme Court, and R. R. Williams, *The Iron Age*.

Mr. Armstrong's good natured raillery of his friends in the Hardware trade aroused much laughter. Mr. Chandler spoke of the felicitous change in convention habits and spirit as represented by the presence of the ladies, concluding with an amusing tale which he gravely referred to as occurring on his trip to Rochester with Mrs. Chandler.

The address of Judge Sutherland will long be remembered by those who heard it. He pointed out the great improvement which has come about in business habits and standards as reflected by the development of the law particularly as applied to purchases and sales of merchandise. He declared that personality and reputation are steadily becoming more and more important as factors in business success and advised all merchants who were incorporating their business to give a personal name. Although directed in a serious, thoughtful vein, Mr. Sutherland's address also abounded in humor, his numerous appropriate Scotch stories being especially enjoyed. R. R. Williams was the closing speaker, and the banquet concluded with the singing of "Auld Sang Lyne."

QUESTION BOX.

The Question Box was in charge of a committee consisting of L. G. Mattison, Newark; G. A. Tuttle, Palmyra, and A. E. Marshall, Lyons. At the Thursday session it was conducted by Secretary Corey of the National Association, and at the closing session by Mr. Mattison. The

discussions were largely confined to the questions listed on the programme, which were as follows:

1. Can volume and profits of business be increased without increasing capital stock?
2. How can we reduce our credits profitably?
3. Is it well to encourage selling merchandise on contracts, or conditional sales?
4. How shall we deal with manufacturers or jobbers who sell to consumers?
5. Is profit-sharing with employees profitable, or can it be made so?
6. Is it wise for the average retailer to incorporate his business?
7. How can this association be made more beneficial to its members?

A noteworthy feature of the Question Box was the scant attention paid to mail order houses. In connection with other matters it was brought out that while much has been accomplished by organized work, meeting this form of competition is coming to be more and more a problem for the individual, which must be solved by merchants meeting their customers over the counter day after day.

The Matter of Donations.

Touching on the question of contributing to local charitable, religious and fraternal work, Mr. Corey said he believed that their support of such objects was one of the strongest holds of local merchants and that it was wise for them to give as freely as they could afford. The importance of giving cheerfully was emphasized and it was suggested that a man's personal and business standing profited more by giving a small amount with obvious cheerfulness and good will than by a larger donation in a less amiable spirit.

Credits.

As has been the case at recent conventions in many States, matters relating to credits commanded especial attention. It is generally appreciated that this is a department of business affording much room for improvement, which may be accomplished by the interchange of ideas and experiences and by legitimate co-operation in a local way. A. Hawkins, Geneva, referred to the excellent results of an association of the retail merchants in all trades in that town, a report which was indorsed by members from several other places. The practical methods of working in such an organization were briefly described.

A Cash Business.

Great interest was aroused by the statement of A. H. Smith, Jr., Smith Hardware Company, Oswego, that he had recently established his business on a cash basis. His plan to make this change popular among his customers is to sell general merchandise 10 per cent. cheaper than formerly. This is emphasized not by making a reduction in prices, but by handing back 10 per cent. of the purchase price every time a sale is made. It developed that Mr. Smith did not apply this method on Stoves, Refrigerators, Fence, White Lead or on articles which have a resale price fixed by the manufacturers; also that monthly accounts were run for the accommodation of mills, contracting builders, &c.

Conditional Sales.

In discussing Question 3, relative to conditional sales, or sales on contracts, appreciative mention should be made of the work of G. A. Tuttle, Palmyra, of the Question Box Committee, who carefully investigated the subject for the benefit of the members and studied up the law bearing on such sales, explaining just how they should be handled and what proceedings could be taken to recover in default of payment. It was voted that the Legislative Committee be requested to prepare a proper form of contract and send copies to the members, together with instructions as to how to proceed in retake goods if the contract was not carried out.

Some of the other questions were talked over in a personal and confidential way. Several members gave intimate details in connection with their own business which were of great value and interest to all, but could not be reported in these columns. Thanks were expressed to Mr. Chandler of Boston for information and suggestions given in this connection. It was voted that the Programme Committee be instructed to arrange that one full session in the middle of the week be devoted to the Question Box next year.

ADDRESS OF PRESIDENT BRADISH.

Retiring President John Holley Bradish, Batavia, a merchant of recognized wisdom and ability, has shown himself an able and efficient executive, whose leadership has been of much profit to the association. He has given much conscientious attention to its affairs and has taken pains to visit other State conventions at his own expense, thus gaining ideas and experience from which the association has benefited to no small degree. He presided at the business sessions with dignity and skill. In his interesting annual address, referred to in our report last week, he touched on the business outlook, the tariff and other matters of national interest, and then referred to several practical features of association work. A committee was appointed to consider his recommendations, which made a favorable report. In the course of his address Mr. Bradish said, in part:

I am more than ever convinced that no greater menace to the welfare of merchants in all lines in the smaller cities and villages can exist than that caused by the continued agitation in favor of the establishment by the postal department of the Federal Government of a parcel or merchandise post system.

An Open Secret.

That this agitation originated with the exclusively mail-order houses and department stores in the large cities, which make a feature of mail order business, is no longer a secret. That they conceived the plan with the idea that they would be the sole beneficiaries, every man with any degree of good sense who has looked into the matter must understand.

Thus far they have failed in their endeavors, but the present Congress is being urged to enact a measure which those who have studied it closely are convinced is nothing more nor less than an opening wedge, an insidious attempt to establish a parcel post system which at its inception would seem to be a benefit to the small city and village merchants, but would soon be so changed that the results for which the mail order houses have been laboring so earnestly would be accomplished.

Farmer Would Be the Loser in the Long Run.

Those who have disapproved the inauguration of this system have based their opposition on the ground that it is directly in the interests of the trade of the great cities, and directly against the trade of the small cities and villages. They have maintained that while the farmer might save for a time a few dollars on his purchases in the big trade centers, he would be the loser in the long run, because of the consequent death of the mercantile business in the community in which he lives. Dead towns are poor neighbors.

That the strength of this argument was appreciated by the advocates of the system is shown by the fact that the measure which is now being so strenuously proposed provides that the service on rural routes shall be limited to packages mailed on such routes, or at the post offices from which the route starts. This would seem to remove the objection that the system would kill the business of rural communities.

Would Mean General Merchandise Post.

Such a system would be of no benefit, whatever, to the mail order houses, and yet they are offering no objection to it. The reason is plain enough. After such a system had been established, the mail order concerns would forthwith demand that it be declared unconstitutional, on the ground that it was class legislation, and insist that its provisions be changed so as to create a general merchandise post.

Senator Root's Position.

Merchants in all lines should take off their coats and fight this movement with all the energy they can command. It is a fight for business life on the part of the small city and village. Petitions protesting against the enactment of any parcel post law should be sent to every member of Congress. Furthermore, it would seem to be advisable for every merchant personally to register his protest with his State Senator and Assemblyman, in view of the fact that Senator-elect Root in a recent address to the State Legislature confessed that he had been so long occupied with matters of a national scope that he would be obliged to depend on the State legislators to advise him what the public sentiment was regarding the subjects which directly affected his constituents in the State. He especially mentioned the fact that he would like to know the sentiment regarding the parcel post system.

Retail dealers, whose interests certainly are entitled to as much consideration as those of any other class of people, should see to it that it is made plain to Mr. Root that they are utterly opposed to the inauguration of any such system.

Good Roads.

It seems to me that retail dealers, especially in small cities and large villages, should lend their aid to every movement looking toward the construction of good roads, under the new State law, in their respective localities. That such roads increase the traffic to towns to which they lead seems already to have been established, and the oftener the farmer comes to town the more often is he likely to visit the places of business of the retailers.

Advantages of the Association.

There was a time when individual effort was a power to be reckoned with, but that is a thing of the past. Today, combinations of capital, industry and labor hold absolute rule. Monopolies may be wrong in principle, they may be unconstitutional and illegal, but they exist, and there is every indication that they will continue to exist for some time. This being the case, merchants who must buy of manufacturers, and employ labor, cannot expect to attain a marked degree of continued success unless they, too, combine. Not necessarily to seek or invite conflict, but to be in a position to protect their rights when such rights are unjustly assailed.

This is the sole object of the New York State Retail Hardware Association. It is not an association formed for the purpose of fixing prices or performing any other of those restrictive acts which are the only excuse for the existence of too many combinations. It is simply a body of men, bound together for the purpose of protecting their legitimate interests, through concerted movement.

Topics discussed during the sessions of the annual conventions are of vital interest to every merchant, and these discussions enable him to profit by the actual experience of others. Furthermore, the meetings make it possible for members to meet prosperous men who have made more than ordinary success in the Hardware business, and who are not only willing but glad to impart the secrets of their success.

Economy in Insurance.

In addition to the advantages which I have enumerated, there is still another, which may appeal to the practical man more strongly than all other reasons combined. I refer to the insurance feature. In the Western States the marked success attained by the State Hardware associations has been to a considerable degree owing to the great saving made by insurance in the Hardware mutuals, to which only members of such associations are admitted. Members of the New York Association are entitled to take out insurance in the mutuals, which save to the insured from 30 to 50 per cent. in rates and afford him as good protection as any of the old line companies. Any dealer who carries at least $2000 of insurance can annually save on his premiums more than enough to pay his association dues.

Local Associations and Concert of Action.

It was my privilege recently to attend a meeting and banquet given by the Buffalo Retail Hardware Merchants' Association, an organization which has a large membership, and is doing effective work in its own field. It is my firm belief that too much cannot be said in favor of the formation of local organizations. They are not only a great benefit to their members, as the Buffalo dealers can testify, but they strengthen our State association.

Even in villages where there may not be more than three or four dealers pleasant relations and complete understanding among those three or four are bound to result in substantial benefits to all concerned. It is simply a realization on a small scale of the value of concerted action. Consider your competitor in business as a friend instead of an enemy. Discuss with him matters of credits, collections and the reduction of operating expenses, and whenever possible co-operate with him in buying.

How much you will both benefit by such action you will soon realize, and it is likely to surprise you. I am speaking from experience regarding this matter. Competition may be the life of trade, but that competition which has as its sole object the destruction of the business life of your competitor is pretty sure to develop the characteristics of a boomerang.

Exposition Feature.

While there are a few who are opposed to the exposition feature of our conventions, maintaining that if the time were wholly given up to the meetings the sessions need not be continued more than two days at the longest, the marked success which attended the expositions last year and the year before would seem to be a sufficient excuse, if one is needed, for continuing them.

These expositions not only afford manufacturers who have new goods to show an opportunity to display them under favorable circumstances, but also provide for the association a legitimate income with which to meet expenses, which cannot be wholly paid from the income derived from membership dues.

Delegates to the National Convention.

It has been discussed pro and con which is the best course to pursue in sending delegates each year to the National Convention. Will the interests of the association be best served by sending as our delegates men of experience who have represented us in previous conventions, or is it better to send new men each year, that the honors may be passed around to different members?

It appears to me that the plan of sending our full quota of experienced delegates outweighs any argument that can be urged in favor of the other idea. We should do what we consider is for the best interests of the association at large, and there is no denying the fact that if we want to have commanding influence in the national body we must send delegates who are acquainted with the duties they are to perform. Let us take a lesson from the politicians, who will tell you that a new member rarely, if ever, commands any influence, or is able to accomplish anything in a legislative body.

I have spoken of this matter because some of our members have told me that they do not agree with me, holding that in order to keep up the interest of members we must stop sending the same men as delegates and pass the honors along to new men every year. I hope this matter will be discussed, so as to aid the nominating committee in determining what is the wish of the members, when they come to select the men who are to represent this association at the next national convention.

Interchange of Delegates to State Conventions.

Our esteemed member, R. R. Williams of New York, when he visited the Carolinas association last summer, carried with him a letter from the New York State Association, containing greetings and expressions of good wishes to the members assembled. This action on our part was much appreciated, and we have received a cordial communication making known that fact. Mr. Williams, in his address to the association, made the suggestion that the State association inaugurate a system of sending delegates to nearby conventions and the matter was favorably regarded by the Carolina people.

I heartily approve of the suggestion, and would be in favor of acting upon it, and making it a feature of our State conventions, provided our treasury was in shape to meet the expense of sending delegates to other States, and entertaining those who come to visit us. These delegates should be men active and prominent in association work, able to discuss matters of general interest pertaining to that work, and ready to do what they can to bring the different State organizations into close touch with one another. On their return home they should give their own associations a report of what they have seen and heard, which would be both instructive and interesting to the members.

It has been suggested that this interchange of delegates would afford an opportunity to employ the talent of competent members who are not among the officers, who would thus be developed so that they would be more useful members of our own association. I hope this sugestion will receive some attention at this convention.

Selection of Next Place of Meeting.

If it should appear wise to the convention to follow the precedent of last year and the year before, and leave to the committee appointed by the incoming president the selection of a place, and make all arrangements for our next annual meeting, I sincerely hope that a strong effort will be made to find a suitable place in some city in the eastern part of the State. Your committee of last year felt that it was for the best interest of the association to locate the convention in that section, but it was unable to find a place that afforded a hall suitable for exposition purposes and at the same time offered ample hotel accommodations to house our members and guests.

Arousing Interest and Increasing the Membership.

Our membership in the eastern, northeastern, and southeastern portions is not what it should be, and I feel that we could arouse more interest and largely increase our membership by holding our next convention at some point in the eastern half of the State. Along the Hudson River, from New York to Albany, there are several wide-awake cities and villages in which we have not a single member, and the same is true of other portions of the eastern part of the State. In the territory suggested the new membership committee will find fruitful ground to work, and their efforts should result in bringing into the association granary a bountiful harvest of members.

This year's membership committee set on foot a plan which has resulted in securing some new members, and I feel sure if the plan is continued and persistently worked, it cannot fail to accomplish the end desired. When we consider the manifest advantages of belonging to the association it brings the blush of shame to the cheek of New York men to see what a poor showing our State, first in wealth and population, makes in comparing our membership with some of the Western States.

CONVENTION NOTES.

The importance of Rochester as a center is emphasized by its large manufacturing and business establishments.

The local Hardware manufacturers and merchants were cordial in extending general invitations to visit their factories and stores, and the opportunity was largely taken advantage of.

President-elect A. E. Towne, Saratoga, read a carefully prepared report of the last national convention at St. Louis, to which he was a delegate, giving a detailed account of the proceedings.

In addition to the representatives of manufacturing and jobbing houses listed as exhibiting at the hall or entertaining at the hotel, there were many others who came to Rochester for the convention and who were cordially greeted by their friends in the trade.

The identification badges provided by Secretary Foley were greatly appreciated and assisted much in the free and informal intercourse which is always desired.

Several manufacturers disposed of some of the goods which they had on exhibition by means of contests. Among these may be mentioned the Supplee Hardware Company, Philadelphia, and the Coldwell Lawn Mower Company, Newburgh, N. Y., which gave away Lawn Mowers; the Oliver Chilled Plow Works, South Bend, Ind., which gave a Plow, and the Lovell Mfg. Company, Erie, Pa., which gave a quantity of Clothes Wringers.

An exhibit of special interest was that of Mack & Co., Rochester, who showed the identical display of D. R. Barton Edge Tools used in the Centennial Exposition at Philadelphia in 1876.

Much gratification was felt at the presence of nearly all the men who have been most closely identified with the organization and growth of the association and who have labored most unselfishly in the past. Among these may be noted former presidents W. D. Hallowell, Penn Yan; C. P. Sherwood, White Plains; L. J. Ernst, Rochester, and L. G. Mattison, Newark; also J. R. Taylor, Little Falls, who issued the call for the initial meeting of the association and was its first secretary; J. B. Foley, Syracuse, the present efficient secretary, and F. E. Pelton, Herkimer, treasurer, who were both first elected to their offices at the Rochester convention five years ago. Sincere regret was felt at the enforced absence of ex-President John G. Ferres, Johnstown, whose son, W. D. Ferres, died during the past year. Resolutions were adopted expressing the deep sympathy of the members with Mr. Ferres in his affliction. Two other members have died since the last convention—John Cameron, Gowanda, and J. E. Strickland, Carthage. Their death was appropriately recognized.

The date and place of the next convention, together with arrangements, &c., will be decided on later by a special committee to be appointed for this purpose by President Towne.

THE HARDWARE EXHIBITION.

The Hardware exhibit was the largest and most attractive that has been held by the association. It was installed in Convention Hall, a building about two blocks from the hotel, and was thronged with interested visitors throughout the open hours. Excellently handled, it was so conducted as not to interfere with the business sessions. Although the building was large, it did not afford accommodations for all who wanted space, and a number of manufacturers and jobbers had headquarters in suites at the Hotel Seneca, some even making exhibits there. Following is a complete list of exhibitors at the hall, the lines shown and the representatives in charge:

ACER & WHEDON, Medina, N. Y.: Furnace Pipe and Fittings, Eaves Trough and Conductor Pipe. Represented by C. W. Whedon and F. J. Whipple.

ALASKA FREEZER COMPANY, Winchendon, Mass.: Ice Cream Freezers. Represented by M. D. Gray and E. D. Sargent. Souvenir, memorandum book.

ALUMINUM COOKING UTENSIL COMPANY, Pittsburgh, Pa.: Seamless Aluminum Cooking Utensils. Represented by G. B. Spath and E. T. Grove.

AMERICAN STEEL & WIRE COMPANY, New York: American and Ellwood Fence. Represented by L. A. Dietrich, J. Gill, F. T. Nutting and J. L. Peoble. Distributed pinks.

E. C. ATKINS & Co., Indianapolis, Ind.: Saws and Saw Tools, Trowels, &c. Represented by J. F. Carey and S. F. Perrigo. Souvenir, Spoon.

ATLANTIC STAMPING COMPANY, Rochester, N. Y.: Sheet Metal Ware. Represented by J. R. McLaughlin, W. P. McLaughlin and M. J. Dowling.

BEERS ENGINEERING & EQUIPMENT COMPANY, Rochester, N. Y.: Pressure tank system of water works made by Leader Iron Works, Decatur, Ill. Represented by A. S. Brown.

BOSS WASHING MACHINE COMPANY, Cincinnati, Ohio: Boss 1904 Automatic, Boss Quick, Bossco Motor, Standard Champion and Banner Rotary Washers. Represented by C. W. Magill.

BRAINERD MFG. COMPANY, East Rochester, N. Y.: Builders' and Cabinet Hardware and Furniture Trimmings, Hinges, Hasps, Corners and Knobs. Represented by W. F. Brainerd, G. D. Rice and H. L. Brainerd.

BRIDGEPORT WOOD FINISHING COMPANY, New Milford, Conn.: Bridgeport Standard Paints and Wood Finishing Products. Represented by W. R. Clapp and O. F. Fersenheim.

E. C. BROWN COMPANY, Rochester, N. Y.: Auto Spray Compressed Air Sprayers. Represented by N. S. Robson.

BUFFALO CO-OPERATIVE STOVE COMPANY, Buffalo, N. Y.: Amherst Stoves and Ranges. Represented by R. G. Jones, F. R. Harmon, C. B. Harris and E. Kener, Jr.

BUFFALO SLED COMPANY, Buffalo, N. Y.: Steering Sleds and Gifford Snow Shovels. Represented by J. Schneider. Souvenir, pin cushion.

BURGESS-NORTON MFG. COMPANY, Geneva, Ill.: Black Eagle Edge Tools. Represented by W. P. Vrooman

CARBORUNDUM COMPANY, Niagara Falls, N. Y.: Sharpening Stones, Razor Hones, Knife Sharpeners, Oilstones, &c. Represented by F. E. Gridley, C. C. Lathrop and L. M. Haskins.

CARTER WHITE LEAD COMPANY, Chicago: White Lead. Represented by E. D. Fisher and C. A. Miller. Souvenirs, desk calendars and book marks.

CENTRAL OIL & GAS STOVE COMPANY, Gardner, Mass.: Florence Lamp Stoves, Automatic and Blue Flame Stoves, and Oil Heaters. Represented by H. Burnham and N. S. Knight.

HENRY CHENEY HAMMER COMPANY, Little Falls, N. Y.: Nail, Machinists' and Farriers' Hammers. Represented by W. H. Yourdon.

CLARK PAINT, OIL & GLASS COMPANY, Rochester, N. Y.: Ruberoid Roofing, Paints, Oils, Varnishes, Brushes and sundries. Represented by D. J. McMillan, M. E. Yost and Mr. Landis.

CLIMAX LOCK & VENTILATOR COMPANY, Buffalo, N. Y.: Climax Sash Lock, Door Guard, Mail Box and Broom Holder. Represented by A. Rosenberg.

COLDWELL LAWN MOWER COMPANY, Newburgh, N. Y.: Lawn Mowers. Represented by J. B. Sweigart, G. P. Tiffany and H. T. Coldwell.

COLUMBUS WOODEN WARE COMPANY, Columbus, Ohio: Acme Washing Machines. Represented by F. E. Jack and C. L. Brandon.

CONTINENTAL COMPANY, Detroit, Mich.: Screen Doors, Window Screens and Frames. Represented by E. E. Bentley.

CROSS BROTHERS & Co., Rochester, N. Y.: Horse Collars and Saddlery Hardware. Represented by P. Schneider and L. C. Cross.

DETROIT VAPOR STOVE COMPANY, Detroit, Mich.: Vapor Cook Stoves. Represented by J. M. Abbott.

F. W. DEVOE AND C. T. RAYNOLDS COMPANY, 101 Fulton street, New York: Devoe Paints, Varnishes, Brushes, &c. Represented by F. D. Everts and J. H. Selleck. Souvenirs, watch fob, cigar cutter and memorandum book.

DOVER MFG. COMPANY, Canal Dover, Ohio: Asbestos Sadirons. Represented by A. S. Howe.

E. I. DU PONT DE NEMOURS POWDER COMPANY, 90 West street, New York: Dummy packages of Smokeless Rifle and Black Sporting Powder and dummy Cartridge of different brands of Dynamite. Represented by B. H. Norton and R. H. Nicol.

EAGLE LOCK COMPANY, Terryville, Conn.: Padlocks, Cabinet Locks, Trunk Locks, Pin Tumbler Night Latches and Dead Locks, Wood Screws, &c. Represented by G. W. Carter and C. J. Clark.

G. J. EMBRY COMPANY, Fulton, N. Y.: Intense Hot Air Furnaces. Represented by C. E. Wilson.

FAIRBANKS, MORSE & Co., Cleveland, Ohio, branch: Gasoline Engine. Represented by H. J. Young, P. J. Brennan, Jr., and W. C. James.

J. B. FORD COMPANY, Wyandotte, Mich.: Wyandotte Dairyman's Cleaner and Cleanser. Represented by L. E. Ruge and W. E. Ratz. Souvenir, pocket comb.

FOREST CITY PAINT & VARNISH COMPANY, Cleveland, Ohio: Thompson's Graining Tool. Represented by A. F. Mattison.

FOSTER STEEL STANCHION COMPANY, Rochester, N. Y.: Foster Steel Stanchions and Stall Frames. Represented by J. Hadlock.

FULLER & WARREN COMPANY, Troy, N. Y.: Stewart Stoves and Ranges. Represented by C. K. Eastwood and F. O. Beattie.

GLOR BROS. & WILLIS MFG. COMPANY, Attica, N. Y.: New Modern Feed and Letter Carrier and Stable Fixtures. Represented by R. M. Glor and R. L. Willis.

C. T. HAM MFG. COMPANY, Rochester, N. Y.: Lanterns, Automobile Lamps, Police Lanterns, Street Lamps, &c. Represented by James Barnes and L. S. Phipps. Souvenir, watch fob.

M. HARTLEY COMPANY, 315 Broadway, New York: Remington Firearms and Union Metallic Cartridge Company Ammunition. Represented by C. L. Kelsey, Jr., and H. H. Stevens.

HEATH & MILLIGAN MFG. COMPANY, Chicago: H. & M. Paints,

Varnishes and Finishes. Represented by N. A. Beardsley, J. W. Van Valkenberg, J. L. Lamont and Geo. Schmitt. Souvenir, watch fob.

HOLLOW CABLE MFG. COMPANY, Hornell, N. Y.: Clothes Lines, Box Band, Carpet Beaters and Wall Ties. Represented by H. C. Preston. Souvenir, button.

HOOD FURNACE & SUPPLY COMPANY, Horning, N. Y.: Hood's Heaters. Represented by A. H. K. Woodcock.

HUNTER ARMS COMPANY, Fulton, N. Y.: L. C. Smith Shotguns. Represented by N. Moore.

IDEAL MOTOR COMPANY, Lansing, Mich.: Peerless Feed Grinders and Gas Engines. Represented by I. Hamilton and A. L. Hoag.

IRWIN AUGER BIT COMPANY, Wilmington, Ohio: Auger Bits. Represented by W. P. Vrooman.

LASHER MFG. COMPANY, Davenport, Iowa: Hardware Specialties, including Spring-In Handle Pot Covers, Plate Scrapers, Roasters, Double Fry Pans, Beaters, Mashers, &c. Represented by E. C. Greeley.

LEAVENS MFG. COMPANY, Vineland, N. J.: Jersey Vises. Represented by P. J. Leavens.

A. L. LINDEMANN & HOVERSON COMPANY, Milwaukee, Wis.: Stoves and Ranges. Represented by W. P. Miller.

LISK MFG. COMPANY, Canandaigua, N. Y.: Lisk Tin, Enameled and Galvanized Ware. Represented by W. D. Summers and P. E. Lewis.

LOWE BROS. COMPANY, Dayton, Ohio: High Standard Paints and Varnishes. Represented by H. S. Wauters, L. E. Raysor and Wm. Bennet.

MACK & CO., Rochester, N. Y.: Complete line of D. R. Barton Edge Tools. Represented by A. J. Weining.

MARTIN-SENOUR COMPANY, Chicago: Monarch Paints. Represented by F. P. Van Hoesen Company and W. C. Schunk.

MATHEWS & BOUCHER, Rochester, N. Y.: Community Silver, shown by E. C. Moore; Lightning Pin Feather Picker, shown by R. Hendrickson, and Osborne's Extension Brick and Stone Drill, shown by H. Hirschfield.

MOHAWK SEPARATOR AND SUPPLY COMPANY, Auburn, N. Y.: Norcross Improved Butter Separator. Represented by F. M. York and S. R. Bell.

MCCASKEY REGISTER COMPANY, Alliance, Ohio: McCaskey Account Register. Represented by T. C. Baxter, H. C. Norton, W. G. Cross and J. H. Lusink.

NATIONAL CABLE & MFG. COMPANY, Niles, Mich.: Lightning Rods, Weather Vanes, &c. Represented by M. G. Mitchell.

NATIONAL ROOFING COMPANY, Tonawanda, N. Y.: Security, Safety and Sparoid Asphalt Roofings. Represented by F. A. Fuller and W. W. Fluker.

NATIONAL SPECIALTY COMPANY, Pittsburgh; Aluminum Coffee Percolator. Represented by J. Steinberg.

OHIO VARNISH COMPANY, Cleveland, Ohio: Chi-Namel Gloss and Mission Finish and Self-Graining Process. Represented by A. J. Cooey and F. E. Keeler.

OLIVER CHILLED PLOW WORKS, South Bend, Ind.: Line of flat land, hill side and riding Plows. Represented by C. D. Cover, J. D. Oliver and James Oliver, 2d.

ONE MINUTE WASHER COMPANY, Sandusky, Ohio: Washing Machines. Represented by A. J. Leake.

ONTARIO DRILL COMPANY, East Rochester, N. Y.: Ontario Grain Drill. Represented by W. Gallup.

PENINSULAR PAINT & VARNISH COMPANY, Detroit, Mich.: Peninsular Paints, Varnishes and Finishes. Represented by W. J. Cole.

PETERS CARTRIDGE COMPANY, Cincinnati, Ohio: Cartridges, Loaded Shells. Represented by T. H. Keller and G. R. Benjamin. Souvenirs, stick pins and buttons.

PHILADELPHIA LAWN MOWER COMPANY, Philadelphia, Pa.: Lawn Mowers and Trimmers. Represented by W. E. Graham, Wm. Ritchie, Sam'l Annear and E. E. Hawks. Souvenir, pocket calendar.

PIKE MFG. COMPANY, Pike, N. H.: Sharpening Stones and Abrasives, Knife Hones, Pyko Grinders and Lawn Mower Sharpening Attachment. Represented by H. R. Conner and H. W. Busier. Souvenir, paper weight.

PITTSBURGH STEEL COMPANY, Pittsburgh, Pa.: Pittsburgh Perfect Fence, Nails, Wire, &c. Represented by J. F. Williams and G. W. Jones. Souvenir, eraser.

PRATT & LAMBERT, Buffalo, Chicago and New York: Varnishes and Finishes. Represented by H. E. Bitzer, S. Hodge and C. W. Ritter.

PRITCHARD-STRONG COMPANY, Rochester, N. Y.: Prisco Lanterns and Money Back and Tiger brand Metal Ware. Represented by H. G. Strong, F. D. Mead and C. H. Stewart. Souvenir, cigars.

PURITAN SOAP COMPANY, Rochester, N. Y.: Metal Polish and Varnishcen Furniture Polish. Represented by H. C. Green and J. C. Bertrand.

REED MFG. COMPANY, Newark, N. Y.: Tin, Enameled and Aluminum Galvanized Ware, Copper Wash Boilers, &c. Represented by C. W. Lewis and M. Driscoll. Souvenirs, pocket mirror, match box and paper weight.

RICKER MFG. COMPANY, Rochester, N. Y.: Hay, Feed and Litter Carriers and Water Basins. Represented by R. J. Cooper.

ROBESON CUTLERY COMPANY, Rochester, N. Y.: Pocket Cutlery, Razors, Scissors, &c. Represented by G. W. and R. Robeson, Fred Cross, C. W. Gillette, C. V. Lewis, E. D. Whitney, Geo. Donovan and E. Booth.

ROCHESTER CAN COMPANY, Rochester, N. Y.: Galvanized Ash and Garbage Cans, Watering Pots, &c. Represented by J. A. Byers and M. E. Gray. Souvenir, thimble.

ROCHESTER CARRIAGE COMPANY, Rochester, N. Y.: Carriages and Sleighs. Represented by Geo. Sullivan and A. S. Furney.

ROCHESTER ROTARY WASHER COMPANY, Rochester, N. Y.: Rochester Rotary Washer. Represented by H. H. Stebbins, Jr., and F. J. Turner.

ROCHESTER STAMPING COMPANY, Rochester, N. Y.: Sheet Metal Ware, Galvanized, Nickel, Copper and Tin Percolators, Chafing Dishes and fancy articles. Represented by G. W. Robeson, Fred Cross, R. Robeson, C. W. Gillette, C. V. Lewis, E. D. Whitney, Geo. Donovan and E. Booth.

RUNDEL SALES COMPANY, Rochester, N. Y.: Rundel Automatic Stropper. Represented by W. F. Rundel.

WM. SCHOLLHORN COMPANY, New Haven, Conn.: Vulcan and Ideal Pliers and Nippers. Represented by G. W. Davis.

SIMONDS MFG. COMPANY, Fitchburg, Mass.: Saws, Files, Hack Saws, Machine Knives, &c. Represented by G. T. Curtis, W. E. Culley, F. L. Mercier, H. D. Horton and H. A. Schulte.

SAMUEL SLOAN & CO., Rochester, N. Y.: Open Tank and Mercury Sealed Hot Water Seating Systems, Boilers, Radiators, Valves and Fittings, Tools, &c. Represented by J. E. Kinner and H. S. Welsh.

F. A. SMITH MFG. COMPANY, Rochester, N. Y.: GaSaver Gas Mantels and supplies. Represented by F. A. Smith and A. H. Bastedo.

STAR EGG CARRIER & TRAY MFG. COMPANY, Rochester, N. Y.: Egg Carriers and Crates. Represented by W. B. Young and H. G. Platman. Souvenir, pocket mirror.

SUPPLEE HARDWARE COMPANY, Philadelphia, Pa.: Pennsylvania Lawn Mowers. Represented by J. H. Bonbright, T. Paton and F. J. Braun.

TAYLOR INSTRUMENT COMPANIES and WATERTOWN THERMOMETER COMPANY, Rochester and Watertown, N. Y.: Thermometers, Barometers, Compasses and other instruments. Represented by T. M. Stewart, P. A. Howard and P. R. Jameson. Souvenir, noveity Thermometer.

TWENTIETH CENTURY HEATING & VENTILATING COMPANY, Akron, Ohio: Twentieth Century Furnaces. Represented by Gus Dolan.

ULRICH & CO., Buffalo, N. Y.: A. O. K. Metal, Silver and Furniture Polishes. Represented by J. Ahlheim. Gave samples.

C. E. VAN DOORN COMPANY, Rochester, N. Y.: Vanco Pressed Steel Mop Wringer. Represented by C. E. Van Doorn.

VERMONT FARM MACHINE COMPANY, Bellows Falls, Vt.: U. S. Cream Separator in operation. Represented by W. E. Carpenter.

EDWIN C. WALKER, Urbana, Ohio: Vaughn's Indestructible Screwdrivers. Represented by W. P. Vrooman.

WAGNER MFG. COMPANY, Sidney, Ohio: Aluminum and Iron Hollow Ware. Represented by W. F. Mellen and G. W. Busch.

WEAVER, PALMER & RICHMOND, Rochester, N. Y.: Cannon Ball Twentieth Century Hangers. Represented by members of the firm and staff.

WEIR STOVE COMPANY, Taunton, Mass.: Glenwood Stoves and Ranges. Represented by W. H. Barker and R. H. Babitt. Souvenir, pocketbook.

WHITE LILY MFG. COMPANY, Davenport, Iowa: White line of Washing Machines and White Lily Gasoline Engine. Represented by A. F. Victor and F. H. Chatfield.

WILMOT-CASTLE COMPANY, Rochester, N. Y.: New Era Hot Air Radiators. Represented by Wilmot Castle and J. G. O'Brien.

ZENITH FOUNDRY COMPANY, Phelps, N. Y.: Zenith Stoves and Ranges. Represented by H. R. Chambers and C. H. Burt.

Among the manufacturing and jobbing houses who entertained or had exhibits at the hotel were noted the following:

SILL STOVE WORKS, Rochester, N. Y.
SIMMONS HARDWARE COMPANY, New York City branch.
E. K. TRYON COMPANY, Philadelphia.
WEED & CO., Buffalo, N. Y.
PHILLIPS & CLARK STOVE COMPANY, Geneva, N. Y.
TOLEDO SCREEN COMPANY, Toledo, Ohio.
BUFFALO WHOLESALE HARDWARE COMPANY, Buffalo, N. Y.
JEWETT & CO., Buffalo, N. Y.
MATHEWS & BOUCHER, Rochester, N. Y.
OHIO TOOL COMPANY, Columbus, Ohio.
IRVING D. BOOTH, Elmira, N. Y.
LOCKWOOD MFG. COMPANY, South Norwalk, Conn.
NORWALK LOCK COMPANY, Norwalk, Conn.
BICKFORD & FRANCIS BELTING COMPANY, Buffalo, N. Y.
MERIDEN CUTLERY COMPANY, Meriden, Conn.
ESTATE OF P. D. BECKWITH, Dowagiac, Mich.
BECKER GLASS & PAINT COMPANY, Buffalo, N. Y.
PATTON PAINT COMPANY, Milwaukee, Wis.
PITTSBURGH PLATE GLASS COMPANY, Pittsburgh.
PHILIP CAREY MFG. COMPANY, Lochland, Ohio.
PRATT & LAMBERT, Buffalo, N. Y.
BURHANS & BLACK COMPANY, Syracuse, N. Y.

ADVERTISING AS A STORE MIRROR.

H. W. Bramley, advertising manager of Sibley, Lindsay & Curr Company, Rochester, delivered an address under the title, "Advertising as a Store Mirror." In introducing his remarks Mr. Bramley said that he had consented to talk in the "Do it for Rochester" spirit, and that he made no pretensions as a speaker. He succeeded.

however, in convincing his audience that he was a thorough master of his subject, and his crisp, practical suggestions were of great interest and value to every merchant present. He said:

Before any retail merchant begins an advertising campaign he should turn his eyes in upon himself. Advertising, however good, in and of itself, is bound to be ineffective, barren of results, unless it reflects faithfully the store behind it.

The retail store is bound sooner or later to stand in the community for exactly what it is worth. If it merits patronage it will receive it. If a business does not embody within itself the elements of success, no amount of advertising which would be classified as of a high order will pull it through.

It is next to axiomatic that any business, a retail business particularly, will take on the character, the energy of the man or men who are behind it. I remember some years ago in discussing with a gentleman the reasons for a certain business not meeting with the success which from outward observation it would seem to merit, he made this remark: "The trouble with that house is, it hasn't any soul. There is no dominating personality behind it."

Sentiment in Business.

No greater fallacy was ever uttered than that there is no sentiment in business, especially in its appplication to retail trade. Sentiment will build up or pull down any business. It will send customers into your store or it will keep them out. Tell me, was there no sentiment back of the splendid trade accorded A. T. Stewart, a merchant who in his discernment and plans and policies was a quarter of a century ahead of his time. Is there no sentiment which draws the trade to the magnificent retail palace of Marshall Field & Co. to-day? Business is born of sentiment. I only wish that I were sufficiently familiar with the Hardware trade to cite examples which might possibly come nearer home.

What has been said is certainly just as true of the Hardware trade as it is of the dry goods business. The majority of our patrons are women. Most of yours are men, and I think that sentiment will take a man about twice as far as it will a woman. Once establish yourself with a man and you have him for a patron until you prove your unworthiness. The average man will walk a mile to buy a collar button of the same man he bought one from the last time if the button proved to his liking.

Exceptions Perhaps.

There will be exceptions to this rule, like proprietor, like store. Now and then you'll discover the smallest and meanest individual succeeding splendidly, but you'll find that it is because that man is smart enough and sufficiently shrewd to appreciate his own littleness, and that he eliminates from store policies that personality which everywhere else is so apparent. He turns himself into a sort of Dr. Jekyll and Mr. Hyde.

Given the ideal store, the store which of itself attracts trade and holds it, we have the field ready for cultivation—for advertising, and good advertising will be the mirror of the store, through various forms of publicity to make the good qualities of the store and its wares so apparent that for anyone in the community to discover a need in the Hardware line will be to suggest that that need be supplied by John Smith & Co.

What Is Good Advertising?

But just how are we to go about this campaign of good advertising? In a measure each individual must solve this problem for himself. Every community has its own peculiarities, its likes and its prejudices, all of which must be weighed and taken into consideration. It is said that one has to talk in larger type west of the Mississippi than east of it, and so what may be successful advertising in Albany may be quite the reverse in Buffalo.

A number of years ago in an address before the Sphinx Club in New York City, Frank Munsey gave this definition of good advertising: "When I was a very young man," said Mr. Munsey, "I heard a country editor up in Maine sum up his ideas of what a newspaper should be in these three words: good, easy reading. I have searched long," continued Mr. Munsey, "to find a better definition for good advertising than this which the country editor set forth as a standard for his paper, but have not found it."

Good, Easy Reading.

The more you study these three words and comprehend all that they include and everything which they exclude, the more you'll appreciate the comprehensiveness, and at the same time exclusiveness of Mr. Munsey's definition of good advertising. Sometimes when I pick up a newspaper or magazine and study through merely professional interest some advertisement where everything has been sacrificd to display, and it is difficult to discover the subject and predicate of a sentence, to say nothing of a connected story, I would that every writer of advertising might know and feel the necessity of making his advertising good, easy reading.

The Man for the Work.

As a general proposition, there is no one so well equipped to prepare the advertising of the average retail establishment as the head of that establishment. He should at least be the inspiration back of it. His personality should be stamped upon it. For a retail store, I have little faith in long range advertising, for copy prepared by some one who is not heart and soul in the business.

Make your advertising a simple, straightforward, heart to heart talk with those persons whom you have a right to expect to be your customers, and the advertising appropriation will not be wasted. Don't strive for originality. Be yourself and you'll be original. Don't copy some one else just because he has succeeded. Study the advertising of successful people in your line, of course, but assimilate it. Take what you think is good for you, always remembering that what is food for one may be poison for another.

If I were a retail Hardware dealer I should do at least three things along pronounced advertising lines, and keep at them consistently and persistently until I had demonstrated to my own satisfaction that such methods were a success or failure for me, and if they seemed to fail, I should investigate very carefully to see if it were not the way I used the methods, rather than the methods themselves, that were at fault.

News of the Store.

To begin with, if there were a daily newspaper at hand, I should take a reasonable amount of space in it, once, twice or three times a week, regularly, anyway. If there were only a weekly, I should use that. And then I would make my space teem with the news of my store—sound, sensible, straightforward, interesting, and, above all, truthful facts concerning the business and its wares.

One time it might be just a word on the policy of the store—my business. Again, I would say something to the mechanic, news of some particular tool or set of tools. At another time I would take up the Farmer's Implements. At another I would have something for the housewife—a suggestion to lighten her burdens through the use of some article for the home. And I wouldn't forget the children. I would make every boy believe he wanted a Jig Saw or set of Tools more than anything else in the world, and that I had just what he wanted.

Going After the Whole Family

In a word, I would interest the whole family in my business, and the unknown lad would be accorded just as good treatment when he came into my store as my best customer. I would make the entire community such firm believers in me and my store that if I told the good wife at Christmas time that a Kit of Tools was necessary to her husband's happiness and her own convenience, every man in town would wake up Christmas morning to find himself in possession of a full fledged Carpenter's Outfit.

One Problem of Advertising Is Solved

in a large measure for the Hardware merchant. His wares, to a great extent, are real necessities of life. The desire for them is already created. He doesn't have to appeal to fashion. He simply must convince you that he has the best. Again, almost any article in the Hardware line may be exactly illustrated, and frequently a good picture is better than any possible word description.

Through the Mails.

Next, I should supplement my newspaper work with personal letters and carefully prepared circulars. I don't like the term circular, but will use it for want of something better. It should be a single page, two, three or four, as the subject warranted, of good reading matter concerning something I had in which the person addressed had a peculiar, personal interest. I should have carefully prepared lists of the farmers, mechanics and others who needed what I had to supply them and they would hear from me frequently enough so that we would have common ground for conversation when we met. Wonderfully effective work may be done by keeping at people in an interesting, forceful way through the mails.

The Store Window.

The third string to my bow, and not the least important would be my store windows. My store windows should do advertising for me every hour of the day and as long as any one was in the street at night. We have some splendid examples here in Rochester of what the Hardware store window may be. There is no dry goods store in the city which has more uniformly and effective window displays than have two or three of our retail Hardware establishments. They have educated the public to instinctively watch their windows. There is something about tools and other utensils which work for us that always interests us if effectively arranged. There is no more efficient advertising possible than good windows. There's the article itself. It may be made to do its own talking.

As a basis of good advertising, we must then have a good store, a good product. As a foundation for the best

advertising, we must have faith that we have the best store, the best product.

And as it is with the individual article, so it may be with the entire business. Give to it the very best that is in you. Then you will have a message which the people want to hear. It will be good advertising, advertising which will stand the only and final test of advertising—results.

MAXIMUM BUSINESS ON A MINIMUM CAPITAL.

W. H. Paddock, Wolcott, who spoke on the subject, "Maximum Business on Minimum Capital," was introduced as a man whose methods of conducting his own business along this line had been particularly successful. That he thoroughly understood his subject was evident to all who were fortunate enough to hear his interesting and carefully prepared address, which took a point of view of the utmost practical importance to every retail merchant. After a happy introduction, Mr. Paddock said:

The subject assigned, "The Maximum Business on Minimum Capital," is a live wire direct from our industrial dynamo. This is the problem that we lie awake over at night while others sleep. How may we increase our business without getting beyond our depth in capital investment, and without allowing our interest accounts to eat up our profits? This is the question that puzzles most of us.

Inventory Reflections.

If in the review of the year's business the records show an increase in gross sales, a fine record of growth, we naturally shake hands with ourselves and feel the satisfaction that comes of a large and growing business; but if, perchance, when our inventory is footed up and the balance struck, we find that we have made no more money than when doing a smaller business, we begin to search about for the reason.

Have our expenses increased in a greater proportion than our increased business would warrant? Has the stock increased to such an extent that our interest account has played an important part in cutting down our percentage of profit? All of these questions are hard to answer; it is hard to arrive at a definite solution of the problem. It is of the last item that I desire to treat mainly in the few minutes that I shall occupy.

Fixed Charges.

In every business there are fixed charges that have to be met before dividends can be declared, and this is just as true of a small retailer who is doing a business of $20,000 as of the large railroad corporation doing business into the millions. In connection with this thought of fixed charges I have taken occasion to make inquiry into the business methods and fixed charges of 10 of our representative men who are members of this association. These men, to all appearances, have been doing a conservative and, I think, a profitable business. In this list are men doing business in country villages, some in large towns and others in small cities and these, I think, are representative of the large majority of our membership.

Average Running Expenses 12 1-2 Per Cent. of Gross Sales.

As a result, I found that the expense ratio (or fixed charges) of doing business would run from 9 to 16 per cent. In other words, it required from 9 to 16 per cent. of the sales to pay the running expenses of the business. These include clerk hire, rent, fuel, light, insurance, taxes, but not the salary or living expenses of the men who furnished the brains of the institution, interest on money invested, or the cost of labor that is sold, such as tinner, plumber, &c. Taking the above as a basis, I found the average running expenses to be 12½ per cent. of gross sales. I might say in justice to those who reported the larger expenses that they were those doing business in the larger towns, where expenses are necessarily higher.

Losses of Sundry Character.

Then there is another fixed charge, not estimated, which enters into every man's business to a greater or less extent according to the skill and sound business sense of the manager. I refer to the losses of sundry character. In this list I would place the losses in doing a credit business, shrinkage in values, &c. Those last are hard to estimate, but for the sake of argument, let us place them at one per cent. of the sales. Granting that we now have a fixed charge of 13½ per cent. for running expenses, let us go further with the comparison.

An Example

Suppose we take for example, a man doing a small strictly cash business. He has capital to the amount of $20,000, which amount he puts into a stock of goods. He rents a store and opens for business. He marks his goods so as to pay a uniform profit—or rather an average profit of 25 per cent. When the year rolls round his books show that he has done a business of $20,000, having turned his stock but once. His business will show a gross profit of $5000, less his fixed charge of 13½ per cent. of sales, which leaves him $2300, or 11½ per cent. on his investment.

Turning Capital Four Times a Year.

Now, on the other hand, another man who is wide awake but has not so much capital, starts out with the small capital of $5000, and determined to make every effort count, puts energy into his business and says that he will not leave a stone unturned that has a dollar under it. He finds on looking over his book at the close of the year that he, too, has done a business of $20,000. He has turned his capital four times, and as a result, he finds at the end of the year that every time he turned his capital he had a profit of $1250, a gross profit of $5000, less fixed charges of 13½ per cent., leaving a net profit of 46 per cent. on capital stock, in place of 11½ per cent. of the man who turned his capital but once. Besides this, he saved interest on $15,000, or $900 advantage over the first. This may be an overdrawn statement—I leave it to you to judge; but it illustrates the point that I desire to make.

Two Essentials.

Granted the importance of these methods, how may we accomplish the results and do a maximum business on minimum capital. Now, it seems to me that the two essentials for accomplishing the desired ends can be summed up in the following:

1. *Good buying.*
2. *Good selling.*

Good Buying.

The characteristics which comprise good buying are not alone in the man who is able to get the last 5 per cent. on a given purchase. This is indeed, important and is good in itself, but there is another element that goes with it, namely, being able to get only what is wanted, and then get the last five per cent.; conservatism, that is the word. It is more important than price.

To buy only what is wanted is often quite as hard as to get the price. It is a serious mistake, I think, to buy more goods than one needs for immediate requirements simply to get the last 5 or 10 per cent. discount. If by buying the larger quantity to get the discount you are obliged to carry the stock 10 months your 5 per cent. is already gone, and if perchance you are compelled to carry a part of the goods into another season, you had better have taken the long price and put your money into something for a quick turn.

Determination and Wisdom Required.

The old adage that a nimble sixpence is better than a slow shilling is most true, and should occupy a most prominent place in the brain of the buyer. In these days when we are drummed to the limit by those silver tongued salesmen who are onto their job and know it, it takes a good man to know when to say no. To be able to weigh all sides of a question and buy only what we want and let the other fellow have the goods that we do not want requires much of determination and wisdom.

I am referring now to those fellows who call but once, and not to those fellows who call on us habitually with the regular line of goods. I am sometimes of the opinion that there are more sharks on the road selling Hardware specialties than ever lived in the seas.

Good Selling.

Let us look to the other end of the business, namely, good selling. And in this I desire it to be understood that the salesman is in a way the stock keeper. This is the case in a country Hardware store. A superior salesman, in my judgment, is not the man who can sell the most new, up-to-date goods alone, at a price, but he who can at the same time work off and keep clean his old stock and do so without offense to his customer. To first show the new up to date goods to some people is like "casting pearls before swine." They don't appreciate them.

A man to be first class in this line must first be a good judge of human nature, must make a thorough study of conditions and people, and then make it his aim not only to say the right thing at the right time, but to sell the right thing at the right time. The central idea that I wish to convey in this line of thought might be summed up in two very small but very significant words, namely, clean up.

Old and Unsalable Goods Revealed by Inventory.

Most of us have just passed through the annual inventory period, and I dare say that with us all it has brought out some goods that we wish we did not have, and one purpose of the inventory which I think is quite as essential as finding our financial standing, is this feature of bringing to the front those goods that have become dust covered, and shop worn and possibly out of date, and getting the same before our attention.

How many goods did you find on your shelves this year that you inventoried the year before? I have known of stores where the dust and cobwebs had rested undisturbed on the goods year after year, until all traces of cost mark

or selling price had long since been obliterated. If they would but add to these goods the "fixed charges," as above referred to, from year to year, I am sure that they would then see where some of their profits were going.

Put Them on the Bargain Counter.

This is not the profitable way. If you find old and unsalable goods on your shelves, the thing to do is to get them to the front, put them on the bargain counter. Sell them at some price; get your money out and into something that will move and move quickly. They will never sell better than at the moment. They are not like wine, they do not improve with age.

We shrink from selling goods below cost, but better that than to let the interest and rust accumulate on them and make them still harder to get rid of. A small and fresh stock of new, snappy Hardware, with everything clean and up to date will attract more people and make you more friends in trade than a large stock with a good assortment of "shop worns."

A Valuable Asset.

Finally, let me say that a most valuable asset to your business is one that can be had at small cost; by some it is prized most highly, while by others it is treated with the least regard. I refer to a reputation for frankness and common honesty. Never misrepresent or overestimate the value of your goods to your customer, however much you may wish to make the sale. If you can sell your customer an article and he finds it better than you represented it, it will make an impression in your favor and establish a point that will not soon be forgotten.

REVOLVING DISPLAY STAND,

THERE is an increasing demand on the part of retail merchants for simple and inexpensive motor devices for operating window displays. Things that move always attract special attention, and much effort is often expended to secure natural or beautiful effects along this line. In *The Iron Age* of July 2, 1908, was described an

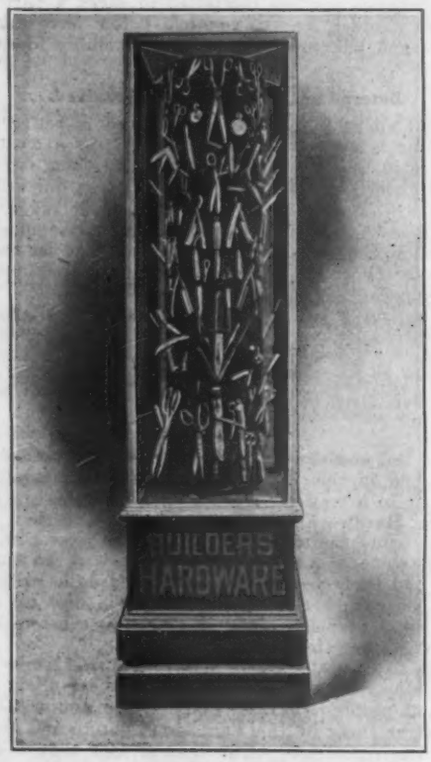


Fig. 1.—Outside Revolving Cutlery Display.

imposing motor display installed by Geo. T. Gadd Hardware Company, Cedar Rapids, Iowa, illustrating an ingenious method of adapting an electric sewing machine motor to this sort of work. The accompanying illustration, Fig. 1, represents a revolving display stand operated by White, Van Glahn & Co., 37 Barclay street, New York. A feature of this outfit is that it

Stands Outside the Store,

being set up near the doorway, where the goods shown on the revolving cylinder may be examined at close range. The display can hardly fail to catch the attention of pedestrians, since it is right at their elbow as they pass by. One side of the varnished oak box which forms the base opens on hinges, giving access to the motor inside. The latter is a clock work motor, known as a turntable movement, Fig. 2. For the information of our readers it may be stated that the movement is made by the Seth Thomas Clock Company, Thomaston, Conn., and 49 Maiden Lane, New York. It is 10½ in. high, 10 in. wide and 5½ in. deep and will turn weights up to 50 lb. if

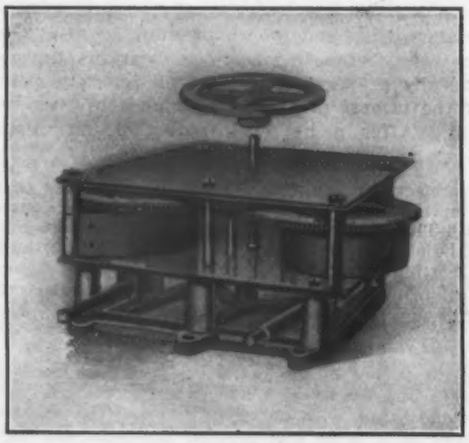


Fig. 2.—Clock Work Motor for Revolving Display Case.

properly balanced, running 7 hr. with one turn of the table per minute.

Above the base, already described, is a glass case, perhaps 1½ ft. square and 4 ft. high, protecting a cylinder which, of course, is mounted on the table or disk above the movement and is turned with it. This is covered with black cloth, forming a good background for the goods thereon, which include many varieties of Cutlery, such as Pocket Knives, Razors, Shears, Scissors, &c. As the cylinder revolves an observer can have the whole display brought before his eye by standing for a minute in one place.

PHILADELPHIA MADE HARDWARE.

A MOVEMENT of originality and importance has been undertaken this year by five leading manufacturers of Hardware whose plants and headquarters are situated in Philadelphia. They include Henry Disston & Sons, Enterprise Mfg. Company, Fayette R. Plumb, Inc., Miller Lock Company and North Bros. Mfg. Company. These large and well-known houses have joined forces in a campaign of advertising and education under the comprehensive caption, "Philadelphia Made Hardware." Their object is to cause the trade to recognize even more than at present the importance of Philadelphia as a Hardware manufacturing center, as well as to promote the sale of their individual lines, which fortunately do not meet at any point of competition. All, however, are sold by the same class of trade.

In entering on this campaign collectively, the manufacturers feel that they can get better results than could be accomplished by any one of them alone, each having the benefit of the prestige and reputation of the others. The element of economy is also considerable as they can share many expenses, which would otherwise be duplicated.

The joint exhibit of these companies is now on the retail Hardware convention circuit, Chas. Castlen, an experienced Hardwareman, having been employed to manage them in person. Among the conventions already covered are Wisconsin, Iowa, Pennsylvania and Illinois. This week the exhibit is attracting attention at the Ohio convention at Columbus, and next week it will be sent to Indianapolis for the Indiana convention. The plan is not to attempt to sell goods but merely to show and explain the lines, inviting jobbers' salesmen to call with their customers. The companies also have a plan to apply some such co-operative method to export business.

NEBRASKA RETAIL HARDWARE ASSOCIATION.

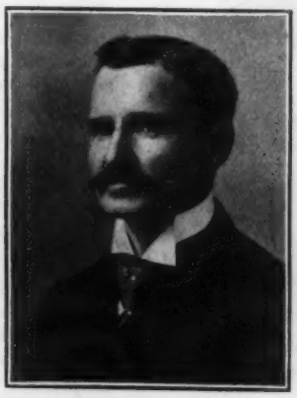
The eighth annual convention of the Nebraska Retail Hardware Association, held in Omaha February 16 to 18, inclusive, was one of exceptional interest even for this State where the standard of excellence in all that pertains to association work is commendably high. Fine weather which succeeded the storms of the previous week contributed not a little in bringing out an attendance which has not heretofore been surpassed in members. About 450 members were present at the convention, while the entire assemblage, including guests and exhibitors totaled a little over 700. Meetings were held in the afternoon of each day in the auditorium of the Moon Hotel, and the absentees at these sessions were at all times exceptionally few.

An address of welcome delivered by C. O. Loubeck, Comptroller, who later spoke upon a topic of trade interest, was responded to in behalf of active members by H. Wineland, C. H. Smith, Chicago, and L. W. Garoutte, Lincoln, speaking for the associate members.

Nebraska's Wealth and Resources.

On Thursday afternoon the convention was honored by the presence of Governor Shallenberger, who delivered an able address, in which he dwelt upon the wealth and resources of the State of Nebraska. He stated that about one-fifth of the surplus produce of the United States amounting annually to from one thousand to fifteen hundred million dollars came from Nebraska's fertile soil; or, stated in other terms, with a present population of one and one-quarter million of people, Nebraska produces surplus products equal to those of Japan

E. S. HAYHURST.



HARRY J. HALL.

DAN KAVANAUGH.

committees to serve during the convention:

Convention Committees.

President Kavanaugh appointed the following committees to serve during the convention:

RESOLUTIONS: S. A. Sanderson, Lincoln; L. F. Holloway, Fremont; C. A. Lord, Shubert.

NOMINATIONS: Frank E. Lake, Lincoln; C. L. Kelley, North Bend; Nathan Roberts, Omaha.

PRESS: George R. Wycoff, Madison; S. C. Oaks, Seward; E. W. Shafer, Tekamah.

CONSTITUTION AND BY-LAWS: L. W. Mittendorff, York; Maurice Hussie, Omaha; Fred Peltz, Blue Hill.

SUGGESTIONS: F. W. Arndt, Blair; Albert Degner, Norfolk; F. W. Ebinger, Plainview; R. H. McAlister, Grand Island; J. G. Wright, Hebron; R. W. Weaverling, Peru; L. P. Wirth, Falls City; E. S. Hayhurst, Loup City; W. O. Klein, Milford; J. C. Michaelson, South Omaha.

INSURANCE: H. J. Hall, Lincoln; Thomas Nelson, Springfield; V. L. Fried, Oakland; W. C. Klein, Milford; George R. Wycoff, Madison.

L. F. Holloway acted as sergeant-at-arms.

Mail Order Competition.

A paper presented by L. W. Mittendorff on competition dealt chiefly with that phase of the question involved in mail order house competition. The view was taken that this could be successfully met by progressive up to date merchants, but the necessity of wideawake methods was emphasized. It was pointed out that, whereas, the catalogue houses depended entirely upon the advertising literature in the way of catalogues and circulars which they send out for getting business, many of the retail merchants who receive advertising circulars from jobbers and manufacturers advertising specialties of one kind or another do not even take the trouble to distribute them among their trade.

In evidence of this the statement of a salesman representing a leading Hardware house was cited to the effect that of all of the circulars distributed among the dealers in his territory in Nebraska only two were enterprising enough to distribute them among the customers in their vicinity.

Mutual Insurance.

The question of mutual insurance occupied the attention of the convention for a considerable time on Thursday. H. J. Hall, president of the Nebraska Hardware Mutual Fire Insurance Company, spoke in a very enthusiastic way about what had been done since the organization of the company four years ago, and what he hoped with proper co-operation and support of the members could and would be accomplished in the future.

It was shown by the treasurer's report that the insurance in force on December 31, 1908, amounted to $893,050; this has, however, been increased by business written since then to something over $1,000,000; that having paid a premium dividend to policy holders of 20 per cent. the first year and 25 per cent. the two succeeding years, the company would this year return 33 1-3 per cent. of the premium collected; that after paying total losses since its organization of $6,143.88, and paying back to members a total of over $5000 in returned premiums, the company now has an asset of $10,964.43, which represents its surplus above all liabilities. It was further stated that a return of 50 per cent. of the premiums paid might easily have been declared this year instead of 33 1-3 per cent., but it was the desire of the directors to act conservatively and increase the surplus in the interests of unquestioned security.

Threatened Legislation.

The only cloud upon the horizon appeared in the form of insurance legislation now pending in the Nebraska legislature. One such bill, should it become a law, would seriously cripple, if not entirely wipe out the mutual insurance companies of the State. This measure, designated at Senate File 235, provides for the amendment of three sections of the present insurance law. By these amendments one section is so changed as to entirely shut out the mutual fire insurance companies of other States from Nebraska; another section, which at present limits the liability of a policyholder in a mutual company to

the payment of one extra premium, is so altered by the proposed amendment as to make it incumbent upon the company to print on the front page of its policy the following notice:

> The assured is hereby notified that by virtue of this policy or certificate he is a member of ——— mutual insurance company, and liable for his pro rata share of all losses and expenses as long as he is a member and is insured by the company.

This it will be seen imposes unlimited liability upon the policyholder.

The proposed law also contains other objectionable features. The members were asked to write letters to their representatives expressing thir disapproval of this piece of legislation and urging them to use their influence to prevent its passage. It was stated in this connection that reasonable assurance had been given that the old law would not be altered at this time, but vigilance was nevertheless recommended.

Question Box.

Owing to the length of the programme which included a number of valuable papers upon questions of vital interest to the trade, the time allotted to the question box was necessarily brief; but the hours devoted to the discussion of questions thus presented on Wednesday and Thursday afternoons were the liveliest of the sessions. These discussions were led by L. C. Abbott of Marshalltown, Iowa, who was present as a representative of the

J. FRANK BARR.

C. B. DIEHL.

Executive Committee of the National Association. Mr. Abbott is peculiarly fitted for leadership on such an occasion as was fully demonstrated by the general participation in the discussions which developed under his leadership.

Builders' Hardware Competition

A question which seemed to touch a point of general interest was how to avoid cutting prices on Builders' Hardware in local competition. Judging from the experiences related by various dealers, this line, it would appear, is particularly susceptible to competitive influences. Several dealers told how they handled the problems involved, but it seemed to be generally accepted that it was a local question, which could only be satisfactorily solved and settled by the competitors concerned; and that the surest means of preventing ruinous competition, not only in this line, but others, was the cultivation of friendly relations among dealers and the promotion of a square deal sentiment.

Quotations Made Over the Telephone.

Another question introduced was, How can we eliminate ruinous competition brought about by telephone quotations which bring dealers in adjoining towns into competition? The consideration of this question brought out the fact that the spread of the telephone as a means of communication in rural communities had introduced a new phase of competition to meet which tactful methods of salesmanship were required.

Some dealers found it inexpedient to give definite prices over the telephone, except when absolutely necessary, since in the absence of an opportunity to explain the merits of the goods and demonstrate quality, the deal usually resolved itself into an issue of the lowest bid. The prevalent use of telephones throughout the country naturally makes this question one of general interest and importance. It is plain, however, that it involves a problem which each merchant must work out for himself in the light of his knowledge of customers and local conditions.

The Value of Window Dressing

as an advertising medium was suggested by the question, "Does it pay to dress show windows in a small town?" Since the majority of dealers present were doing business in towns of from 500 to 2500 population, this question appealed to them directly. There seemed to be no dissent from the opinion that a judicious amount of such advertising was profitable even in the smallest towns, and that in the larger cities it was an indispensible means of attracting trade.

Many practical suggestions upon the arrangement of window displays were brought out in these talks, and a number of humorous conceptions in window dressing were described. There was a notable degree of unanimity of opinion in favor of plain price marking of window goods.

Jobbers' Sales to Consumers.

Quite a number of grievances came before the Grievance Committee for adjustment during the year; most of them were of minor importance, but all were amicably adjusted. There was one, however, which involved issues of more than ordinary interest, and the settlement of it is regarded with extreme satisfaction by both sides to the controversy. The grievance in question related to the selling of goods by jobbing houses direct to consumers, such as the employees of jobbers in other lines as well as their own; also contractors and public institutions.

After a series of conferences between the committee and Omaha jobbers, including other lines than Hardware, the following agreements were reached:

1. That we, the jobbers, confine our sales to the dealers in their respective lines.
2. That we decline to sell to contractors or consumers regardless of the quantity of goods desired, or the circumstances, except on order from a retailer.
3. That corporations and public institutions, such as are now recognized, quoted and sold by manufacturers or jobbers in competing markets, shall be excepted.
4. That we will not sell goods to employees except on order from a retailer.
5. That we will limit exchange trade as much as it is possible to do, and in this the co-operation of the retail trade, in Hardware as well as in other lines, will prove of material benefit.

President's Address.

Reviewing the events of the year, President Kavanaugh congratulated the association upon its increase in membership during the past year. He advocated the cultivation of amicable relations between retailers and jobbers, believing in the desirability and advantage of the jobbers as an intermediary in the distribution of goods. At the same time he insisted that the Hardware jobber had no legitimate claim upon the patronage of retail dealers that is not based upon service, price and quality considerations. Referring to some questions of timely interest, he spoke in part as follows:

> I shall briefly call your attention, as deserving your consideration, that which must enter into your plans for the successful conduct of your business, the difficulties confronting the retailer in his purchase and sale of merchandise.
>
> 1. Those goods with controlled cost prices; those with controlled retail prices, where the retailer pays out of his profits for their being popularized by publicity advertising, being forced to accept a less profit than he realized upon other goods of equal intrinsic value, those old and established brands of Tools, &c., many of which we are forced to sell at staple prices.
>
> 2. Private brands of jobbers who control their prices, and upon which there is no competition in buying.
>
> 3. That class of goods wherein no comparison of price can be made because of differences in sizes, kinds, numbers and finishes, which make it difficult to determine their real value.
>
> 4. The class consisting of staples, such as Nails, Wire, Loaded Shells, Bolts, Screws, &c., which are sold at less than cost, when expense of doing business is taken into account.

Now, in addition to these problems of purchase is added competition, which places in the hands of our customers a price bulletin on every article we carry in stock.

Two Questions.

These conditions raise two questions for discussion:

1. Which is the better for the retailer, a restricted price or open market?

2. Have retailers, as a class, reaped their proportion of prosperity for the past few years?

Is it all the retailer's fault? If not, are we not justified in suspecting that there may be something wrong?

In these restricted prices due regard is not always given to the profits of the retailer, and no restricted price can be made satisfactory until manufacturers make a delivered price the same at every point in the territory where his goods are sold.

Many people are misled by words, and the word "cheap" is a great sinner in this respect. One of the dictionary definitions of "cheap" is, "being of comparatively little value, hence poor." This seems to define the character of a large portion of the goods priced as cheap by the price bulletins which you and I have been receiving lately, on account of the good rating we Hardware people have in Chicago. There are, however, quite a few goods priced by these people, for which we Hardware merchants are compelled to pay too much.

The Hardware Jobber.

We have always advocated and believe in the advantage and desirability of the Hardware jobber as a source of supply. But this jobber has no legitimate claim upon our patronage that is not based upon service, price and quality. It is his duty and mission to place us in a position to sell the consumer, meeting all competition.

We are convinced that this is not being generally done. Complaints come to us frequently that some of the special brand goods are not worth the money. Occasionally an article not carried in stock, shipped direct from the factory, is billed by the jobber outrageously high. Some household items every day used are quoted to us higher than our customers can purchase direct. The careless retail buyer is often charged the limit, and frequently doses of this character breed trouble.

Some jobbers sell at retail, using their buying advantage to quote cut prices, and this results in their losing all their local business. The tendency of jobbers is to cover more territory, add more salesmen, push special brands whose prices they control, and quote net prices instead of discounts.

The number of new Hardware jobbers entering the field is out of all proportion to the increase of new retailers. Their percentage of selling expense almost equals ours. There is danger that the jobbers' end will get top-heavy and not only bring trouble upon themselves, but upon their retail customers.

There never was a time when the Hardware jobbing ranks were filled with men of greater energy and ability. The leaders have combined wonderful system with superior management. They have the confidence and friendship of the entire retail trade. There are some wrongs that need righting, and we have aimed in a kindly spirit to name them. An over supply of jobbers is a menace to the retail and wholesale trade.

The jobbers can protect us from such conditions by furnishing goods on the lowest possible margin, and by refusing to enter into any agreement or combination with manufacturers in which his retail customer's interest is not considered and protected.

More than 95 per cent. of the Hardware jobbers of the United States belong to the National Hardware Association, an organization that has been in existence about 13 years. Ought not this knowledge open our eyes to the necessity of better organization on the part of the retailer?

The present is an era of organized effort and it is recognized that individual effort generally fails where organized, well considered and well directed effort is successful. Conferring together for several days in business meeting and personal contact with those engaged in the same line of business, is certain to enlarge one's view of commercial affairs. Fraternal relations are established between competitors, which has a tendency to eliminate unpleasant and unkind features from business competition.

Express Matters

I am indebted to the able editor of *The Iron Age* for a copy of an editorial which will appear in the next issue of that excellent journal, covering the question of express matters, in which he calls our attention to the unreasonable and uneven charges exacted by these companies, disregard of specified routing, delays in delivery, delay in settlement of claims, unreasonable restriction of free delivery limits, overestimating weight of package, &c., all of which is at least presumptive evidence that the public has ground for complaint.

This is a matter I hope you will give your careful consideration, and one that should be taken up by your Committee on Resolutions. As Mr. Williams well says: "A reform in the express service, and a radical lowering of its charges would take the wind out of the sails of the advocates of a merchandise post."

Growth of the Association.

Among the gratifying statements made in Secretary Barr's report was the fact that in addition to the 309 names which composed the membership roster at the last convention, 196 new members had, up to January 15, 1909, been enrolled; and most remarkable of all was the intelligence that more than half of this membership, 101, to be exact, was secured during the first 15 days of January of the present year.

It was further explained that the receipt of so many applications in so short a time was not due merely to a happy coincidence, but was the result of a carefully planned and well executed campaign of personal solicitation. Under the plan adopted the State was divided up into small districts and two members in each of these were delegated to call upon all nonmember Hardware dealers in their respective districts and endeavor to induce them to become members.

Association Boosters.

How well the members drafted for this service discharged their duties is shown in the results above stated and in honor of their achievement they have been designated the flying squadron. This body of association boosters includes the following members:

L. P. Worth of Falls City and C. A. Lord of Shubert.
F. W. Waverling of Peru and L. B. Upton of Union.
F. W. Arndt of Blair and R. W. Shafer of Tekamah.
Geo. R. Wycoff of Madison and Albert Degner of Norfolk.
F. W. Ebinger of Plainview and E. S. Hayhurst of Loup City.
L. F. Holloway of Fremont and C. L. Kelley of North Bend.
R. H. McAllister of Grand Island and A. C. Lund of Kearney.
N. A. Hargelroad of Holstein and Fred Fels of Blue Hill.
W. C. Klein of Milfred and F. H. Smith of Lincoln.
J. C. Wright of Hebren and President Kavanaugh of Fairbury.

At the suggestion of W. L. Garoutte it was unanimously agreed by the convention to form a second section of the flying squadron, to be composed of a committee of associate members, whose duty it should be to push the insurance in that branch of the organization.

Five Hundred Members.

It was further shown by the report that prior to the convention, after deducting those who had dropped out because of retirement from the business, the net membership was 478, but new members subsequently taken in rounded out a total of full 500. Speaking of delinquent dues, the secretary observed that some of the old members seemed to think that when they do not attend the annual convention they failed to derive any benefit from the association, and therefore omit their dues for that year. While this was regarded as a compliment to the skill and ability of the executive officers in arranging an attractive convention, the fact was emphasized that the benefits and usefulness of membership extend through every one of the 52 weeks of the year.

A strong plea was made for the recognition of exhibitors, who at considerable expense had come from all parts of the country to help make the annual meeting a success. The hope was expressed that members would patronize the manufacturers and merchants here represented to the extent of at least placing trial orders with them, thus making it an incentive for them to come again.

New Officers.

Upon presentation of the Nominating Committee's report the secretary was by resolution instructed to cast a unanimous ballot for the following officers:

PRESIDENT, E. S. Hayhurst, Loup City.
FIRST VICE-PRESIDENT, W. C. Klein, Milford.
SECOND VICE-PRESIDENT, A. A. Lawson, Hastings.
THIRD VICE-PRESIDENT, C. B. Diehl, Stratton.
SECRETARY, J. Frank Barr, Lincoln.
TREASURER, H. J. Hall, Lincoln.
EXECUTIVE COMMITTEE: G. R. Wycoff, Madison, one-year term; Albert Degner, Norfolk, three-year term.

The term of only one member of the Executive Committee expires each year, but the resignation of a holdover necessitated the election of an additional member to fill the unexpired term.

Having attained a membership exceeding 500 the association is entitled to one extra delegate to the national convention this year. The following delegates and alter-

nates were elected to attend this meeting, which will be held in Milwaukee the last week in May. Delegates: E. S. Hayhurst, J. Frank Barr, D. Kavanaugh, S. H. Sanderson, C. L. Kelly and M. D. Hussie. Alternates: F. Pelz, L. P. Wirth, D. E. Workman, F. W. Ebinger, E. W. Shafer and R. W. Weaverling.

Prompted by a desire to co-operate to the fullest extent with neighboring State associations, the following members were selected to visit Hardware conventions in the States named: R. H. McAllister, Iowa; L. F. Holloway, South Dakota; W. F. Arndt, Minnesota; W. T. Bristol, Colorado.

Resolutions Adopted.

Among other resolutions adopted were the following:

That we look with disfavor on the agitation for a parcel post, and request our membership personally to disseminate information as to the results of passing such a law and instruct our Representatives to work against it.

Several Senate and House bills that appear to be detrimental to the best interests of our State have been before your committe, and we recommend that the two House bills referring to amendments of Garnishee law, House roll No. 136, 368, and Senate files No. 71, 95, 96 and 235 be called to the attention of our Legislative Committee, and that this committee be instructed to call the attention of our State Railroad Commissioners to several recent advances in minimum weights of carload shipments and endeavor to secure a more satisfactory adjustment of the same.

That we appeal for a national law adjusting what appear to be unjust charges, arbitrary rulings, disregard of specified routings, delays in transit, delays in settlement of claims, unreasonable restriction of free delivery limits, &c., on the part of the express companies.

Nathan Roberts on Trade Ethics.

Reaching out beyond the mere commercial side of business life, Nathan Roberts, Omaha, delivered an address upon trade ethics, which was full of thoughtful sentiment and high conception of the rules that should govern business intercourse, which if reduced to practice would certainly go far toward eliminating much of the unpleasant friction now encountered. Mr. Roberts' address will be given in a future issue.

Indiscriminate Sale of Firearms.

The question of the indiscriminate sale of small Firearms was brought up by M. D. Hussie, and after considerable discussion it was resolved that the association should go on record as expressing its disapproval of the unrestricted and indiscriminate sale of such Arms. Several of the members spoke of the precautions taken and the care exercised in handling these goods, and a number of instances were cited where tragedies had been prevented by the refusal to sell deadly weapons to intoxicated and otherwise irresponsible persons.

Entertainment.

A very complete and pleasing programme of entertainment was prepared by the Omaha members, with the able assistance of the Omaha Commercial Club. On Thursday afternoon the visiting ladies were tendered a reception and lunch by the Omaha ladies in the parlors of the Rome Hotel, and on the following day a matinee theater party was arranged for them at the Orpheum. Both of these occasions were greatly enjoyed by guests and hosts alike.

The principal feature of the entertainment programme was a complimentary banquet given on Thursday evening in the Rome Hotel. After the dinner the 350 persons present listened to a number of eloquent and entertaining speeches delivered in response to toasts. Presiding at the speakers' table was W. S. Wright, former president of the National Hardware Association, whose genial humor lent inspiration to the speeches and awakened a responsive echo in the audience as well. The banquet was concluded by the singing of "Auld Lang Syne" by the entire assembly, accompanied by the orchestra.

For this and other evidences of painstaking care exercised by the Omaha members for the comfort and pleasure of those attending the convention, the thanks of all are due to the Entertainment Committee, composed of the following Omaha Hardwaremen and their ladies: H. M. Rogers, N. Roberts, Charles Morton, A. J. Hayne, Theo. Sinhold, L. Pettengill, M. D. Hussie and J. C. Michaelson.

Convention Notes.

Among the visitors present from other States were: L. C. Abbott, president of the Iowa Association; P. C. De Vol, past president of the Iowa Association, and C. W. Griffin of the South Dakota Association, who addressed the association upon association membership.

George R. Wycoff, Madison, in his report, as delegate, to the St. Louis national convention, referred to Nebraska as a State without a bonded debt, whose people have 168 million dollars on deposit in her banks; whose agricultural products last year enriched her people to the amount of 361½ million dollars, and whose 494 manufacturing industries, employing 13,361 wage earners, turned out products to the value of 151 1-3 million dollars.

Among the suggestions offered in the report of the Suggestions Committee was one indorsing the Pure Paint Measure, Senate File No. 40, now before the State Legislaure, and recommending its passage as a means of protection for both the retail merchant and consumer.

Telegrams of greeting were received from L. D. Nish, secretary of the Illonois Association; Frank A. Bare of the Ohio Association, and Saunders Norvell, president of the Norvell-Shapleigh Hardware Company, St. Louis.

HARDWARE EXHIBITS.

The exhibition of Hardware goods was held in the Auditorium Building, a block and one-half distant from the convention headquarters in the Moon Hotel. The ample floor space afforded in the large amphitheatre of this building gave exhibitors an excellent opportunity for the display of their goods. The booths were of uniform design, and arranged in aisles that enabled the crowds to circulate through the building without crowding or congestion.

The auditorium was opened to visitors during the entire forenoon of each day and in the evenings after the close of the business sessions of the convention. Many expressions of satisfaction concerning the management and arrangement of this important feature of the convention were heard from the exhibitors, and the interest of members was plainly indicated by the numbers who visited the display each day.

The list of exhibitors follows:

AMERICAN STEEL & WIRE COMPANY, Chicago: Wire Fencing. Represented by L. W. Garoutte, Scott J. Garoutte and Park B. Garoutte.

AMERICAN WRINGER COMPANY, New York: Clothes Wringers and Rubber Rolls. Represented by F. E. Rouse.

ACME WHITE LEAD & COLOR WORKS, Detroit, Mich.: Varno-Lac, Stains and Varnishes. Represented by C. E. Ricksecker.

E. C. ATKINS & CO., Indianapolis, Ind.: Saws and Tools. Represented by Paul L. Edwin, T. F. Barbour and S. M. Perrigo.

ALABASTINE COMPANY, Grand Rapids, Mich.: Alabastine. Represented by F. J. Parker and John Krandenburg.

BARTLETT & NORRIS, Lincoln, Neb.: Stoves and Ranges.

BLACKSTONE MFG. COMPANY, Jamestown, N. Y.: Washing Machines. Represented by Grove W. Abbey.

BOSS WASHING MACHINE COMPANY, Cincinnati, Ohio: Represented by Louis E. Dietz.

CARBORUNDUM COMPANY, Niagara Falls, N. Y.: Abrasive Specialties. Represented by Harry A. Eaton, Geo. L. Budroe and George N. Allen.

COLDWELL LAWN MOWER COMPANY, Newburgh, N. Y.: Lawn Mowers. Represented by E. B. Standart.

COX FURNACE & TIN COMPANY, Omaha, Neb.: Handy Furnace Pipe. Represented by A. B. Meston.

DUTRO MFG. COMPANY, Mason City, Iowa: Sash and Door Holder. Represented by S. B. Dutro and John F. White.

DE LAVAL SEPARATOR COMPANY, Chicago: Represented by Charles E. Shrader and W. E. Rundall.

E. I. DU PONT DE NEMOURS POWDER COMPANY, Kansas City, Mo.: Shotgun Smokeless Powder. Represented by D. D. Cross.

DOVER MFG. COMPANY, Canal Dover, Ohio: Asbestos Sad Irons. Represented by Arthur S. Riley.

ENTERPRISE ENAMEL COMPANY, Bellaire, Ohio.: The Corona Roaster. Represented by Thomas Kemp.

J. B. FORD COMPANY, Wyandotte, Mich.: Dairyman's Cleaner and Cleanser. Represented by C. C. Lowitz and J. T. Schendan.

FERDINAND DIECKMANN COMPANY, Cincinnati, Ohio: One-Piece Conductor Elbows. Represented by Otto Dieckmann.

GLOBE MFG. COMPANY, Perry, Iowa: "Quicker Yet" Washer. Represented by Chas. J. Todd and D. D. Bryan.

GATLIN MFG. COMPANY, Kansas City, Mo.: Importers of Enamel Ware, Glassware, &c. Represented by J. F. Shortridge.

GIBLIN & COMPANY, Utica, N. Y.: Heating Apparatus, Steam and Hot Water Boilers, Warm Air Furnaces and Combination Heaters. Represented by Fred. L. Nesbit and G. W. Jackson.

GRISWOLD SEED COMPANY, Lincoln, Neb.: Garden Seeds. Represented by Q. A. Dungan and G. A. Chambers.

GABEL MFG. COMPANY, Hawkeye, Iowa: Twentieth Century Pig Forceps. Represented by W. A. Hathaway.

HOBISON MFG. COMPANY, Kansas City, Mo.: State agents Louden Hay Tools. Represented by Z. H. Chittenden.

HERRICK REFRIGERATOR COMPANY, Waterloo, Iowa: Family Refrigerators. Represented by T. H. Smith.

HOWARD STOVE & MFG. COMPANY, Omaha, Neb.: Represented by H. B. Huffaker, T. G. Travis and E. L. Northum.

HURLEY MACHINE COMPANY, Chicago: Washing Machine. Represented by Edward J. Riedy.

JUBILEE MFG. COMPANY, Omaha, Neb.: Makers of Self-Heating Sad Irons and Shade and Curtain Holders. Represented by P. V. W. Flaminant and A. F. Gilbert.

KEASBEY & MATTISON COMPANY, Ambler, Pa. Represented by J. F. Lowe and A. A. Avery.

KEITH FURNACE COMPANY, Des Moines, Iowa: Hot Air Furnaces. Represented by R. S. Keith and Geo. E. Willsie.

F. D. KEES MFG. COMPANY, Beatrice, Neb.: Hager's Automatic Furnace Regulator. Represented by F. D. Kees.

LINCOLN STOVE REPAIR COMPANY, Lincoln, Neb.: Green's Base Heater Furnace. Represented by J. V. Hyder.

LENNOX FURNACE COMPANY, Marshalltown, Iowa: Torrid Zone Furnaces. Represented by J. W. Heald and C. E. Doughty.

MACGOWAN & FINIGAN, Omaha, Neb.: Plymouth Rope. Represented by W. E. Callin.

MANUEL-SMITH HEATING COMPANY, Minneapolis, Minn.: Heating and Ventilation. Represented by Olof Oleson and W. F. Kunze.

MARLIN FIRE ARMS COMPANY, New Haven, Conn.: Guns. Represented by Charles Porter.

MIDLAND GLASS & PAINT COMPANY, Omaha, Neb.: Paints, Varnishes and Glass. Represented by J. B. Reinhardt, O. G. Oleson, T. B. Coleman, Charles Bauserman, G. M. Worthington, Geo. W. Fanning and John A. Stein.

MILTON ROGERS & SONS COMPANY, Omaha, Neb.: Stoves and Ranges. Represented by J. Whitney and H. A. Cole.

MONARCH MFG. COMPANY, Toledo, Ohio, and Council Bluffs, Iowa: Axle Grease. Represented by W. Browne Cessna.

MOORE BROTHERS LIGHTNING ROD COMPANY, Maryville, Mo.: Copper Cable Lightning Rods. Represented by G. J. Moore, U. J. Wilson and H. B. Bond.

NEY MFG. COMPANY, Canton, Ohio: Haying Tools and Hardware Specialties. Represented by H. W. Anthony, J. M. Mobley, F. Sullivan and L. Stern.

NEBRASKA HARDWARE COMPANY, Lincoln, Neb.: Wholesale Hardware. Represented by H. B. Hewitt, A. W. Lucas, C. R. Graham, Geo. Leach, J. G. Pierson and W. E. Jakway.

NEBRASKA SEED COMPANY, Omaha, Neb.: Seeds. Represented by H. G. Windheim.

NORMAN MFG. COMPANY, Des Moines, Iowa: Acetylene Gas Generators. Represented by F. L. Oldfield.

NOISELESS WASHING MACHINE COMPANY, Boone, Iowa. Represented by G. V. O'Grady and U. W. Walton.

OMAHA PAINT & GLASS COMPANY, Omaha, Neb.: Adhesium. Represented by C. S. McGill, Geo. S. Perkins, A. M. White, Julius Neil, Jos. Parlik, Ernest Williams and Wm. H. White.

OMAHA STOVE REPAIR WORKS, Omaha, Neb.: Marvel Wrought Iron Furnace and Smith's Water Heater. Represented by Hugo Schmidt, C. M. Eaton and Will H. H. Davis.

OHIO VARNISH COMPANY, Cleveland, Ohio: Chi-Namel. Represented by W. S. Smith and Geo. C. Powers.

ONEIDA COMMUNITY, LTD., Niagara Falls, N. Y.: Community Silverware and Traps. Represented by Alfred Clark and W. L. Wingate.

PAXTON & GALLAGHER COMPANY, Omaha, Neb.: Wholesale Hardware. Represented by Geo. T. Wright, J. E. Schlott and W. G. De Lee.

PRATT & LAMBERT, Buffalo, N. Y.: Varnishes. Represented by J. E. Wansbrough.

PITTSBURGH STEEL COMPANY, Pittsburgh, Pa.: Pittsburgh Perfect Poultry and Garden Fences. Represented by W. S. Ellsworth and Robert E. Shaw.

PIONEER IMPLEMENT COMPANY, Council Bluffs, Iowa: Crystal Washer. Represented by O. Linebarger.

PETERS CARTRIDGE COMPANY, Cincinnati, Ohio.: Ammunition.

QUINCY STOVE MFG. COMPANY, Quincy, Ill.: Monogram Stoves and Ranges. Represented by A. G. Haug and A. H. Key.

RIBBEL PAPER & WOODENWARE COMPANY, Omaha, Neb.: Lion Washer and Cedar Woodenware. Represented by H. A. Smith and G. M. Ribbel.

TOM RAY CUTLERY COMPANY, Kansas City, Mo. Represented by Jos. D. Kidwell.

REYNOLDS REFRIGERATOR COMPANY, Fremont, Neb.: Refrigerators. Represented by C. W. Reynolds.

STANDARD SEWING MACHINE COMPANY, Cleveland, Ohio: Standard Rotary Shuttle Sewing Machines. Represented by W. A. Doggett, Lincoln, Neb.

ST. PAUL ROOFING, CORNICE & ORNAMENT COMPANY, St. Paul, Minn.: Easy-Bend Eave Troughs. Represented by J. G. Williams and W. A. Wittbecker.

R. F. STRUTHERS, Omaha, Neb.: Lightning Rods. Represented by H. S. Foulk.

W. H. STEPANEK, Cedar Rapids, Iowa: Stepanek Cash and Sales Registers, Ledgers and Journals.

G. A. SNOWDON, Blair, Neb.: The Easy Hoist.

W. C. SHINN, Lincoln, Neb.: Copper Cable Lightning Rods. Represented by C. M. Loomis, N. M. Simpson and A. A. Knice.

SHERIDAN STOVE MFG. COMPANY, Quincy, Ill. Represented by W. H. Heim.

SPRAGUE FOUNDRY & MFG. COMPANY, Council Bluffs, Iowa: Sprague and Western Underfeed and Sunshine Furnaces. Represented by R. L. Sprague and W. J. Lauterwasser.

TOWNSEND GUN COMPANY, Omaha, Neb.: Sporting Goods. Represented by W. H. Buckner and Wm. Burns.

UNION METALLIC CARTRIDGE COMPANY & REMINGTON ARMS COMPANY, New York: Ammunition. Represented by M. F. Sharp, B. A. Manning and K. E. Willis.

VICTOR MFG. COMPANY, Leavenworth, Kan.: Wonder Washer. Represented by J. H. Field, J. I. Goodman and F. J. Tallant.

VERMONT FARM MACHINE COMPANY, Bellows Falls, Vt.: United States Cream Separators. Represented by J. C. Griffis.

VOSS BROTHERS MFG. COMPANY, Davenport, Iowa: Voss Line of Washers. Represented by Geo. Woodall and Jos. D. Kidwell.

WATHENA WASHER COMPANY, Oakland, Neb.: The White Cloud Washer. Represented by C. E. Anderson and D. B. Houston.

WAGNER MFG. COMPANY, Cedar Falls, Iowa: Steel Hand Sleds and Hardware Specialties. Represented by J. H. Putnam.

WATERLOO REGISTER COMPANY, Waterloo, Iowa: Side Wall and Floor Registers. Represented by J. Pfeffer.

WAHLE FOUNDRY & MACHINE WORKS, Davenport, Iowa: Snowball and Cascade Washers. Represented by F. B. Chapman and Anton Nielsen.

E. L. WATROUS MFG. COMPANY, Des Moines, Iowa: Stamped Steel Hardware. Represented by E. Watrous and Fred McFawn.

WHITE LILY MFG. COMPANY, Davenport, Iowa: Clothes Line Reel and Washers. Represented by Sam T. White and Theodore Rosche.

YALE & TOWNE MFG. COMPANY, New York: Yale Locks, Builders' Hardware, Art Metal Work. Represented by A. B. Howell.

Salesmanship.

The address of S. A. Sanderson, Lincoln, on salesmanship was illustrated by a chart which represented knowledge, confidence and enthusiasm as the foundation of such requisites of salesmanship as confidence, self-appreciation, attitude, loyalty, enterprise, sincerity, manners, alertness, honesty, interest and perseverance. Mr. Sanderson spoke in part as follows:

I feel that I am assuming a great responsibility to be invited to discuss a question of such vital importance to the Hardware interests of this and every other State—a subject which has been discussed and written about by some of the brightest minds in our trade journals.

I have placed a diagram on the wall to my right, which you all can see, and which will give you a few ideas of what I consider to be some of the basic principles of salesmanship, which if carried out will help each one of us in our own business to be better salesmen.

Each One of Us Is the Architect

of his own future. We draw the plans for the construction of our future human edifice, and we select the materials that enter into the structure. The purpose in life is more than simply making a living; but the question of salesmanship and the matter of trade ethics, which was so ably considered yesterday, are principles which should govern us in the conduct of our business. So that the first thing that we want to-day is character; strong, honest, self-reliant manhood. These are the foundation stones which should enter into the structure of any human edifice. We must all learn to go it alone, and not spend too much of our time watching our competitor.

Selling More Important Than Buying.

In merchandising there are two very essential things—buying and selling. The old saying is, things well bought are half sold, but it don't make any difference how well you buy them, you do not get any returns until you sell them. If you purchase too many simply to get them cheap, you had better pay more and sell them oftener. I would put the selling above the buying for the average merchant, and state that in my opinion if he is unable to look after both carefully, he would better leave his buying largely to some conscientious jobber whose interest it would be to see that he had the right goods in the right quantities, and at the right price, and then push his sales.

"'Tis sales that move the wheels of business." The same elements that make success in any undertaking are essential in selling goods—viz., knowledge, confidence and enthusiasm. Knowledge of yourself and knowledge of your goods; confidence in your goods and in your ability to favorably introduce those goods to your friends—your customers, and enthusiasm born of that knowledge and bred of that confidence.

Knowledge of Self.

I place first knowledge of yourself. Self-appreciation stands at the top. I mean by that, self-appreciation, know yourself, develop the strong points and overcome the weak ones. That is what I mean by knowledge of yourself. Build yourself up. You should have a knowledge of your goods, how they are made, how constructed, and who makes them, and why one factory's goods are better than the other's, and why you believe they are better. Also cultivate appearance and attitude, for first impressions are lasting ones. There

is a sermon in every line, and there is a sermon in every one of those points.

You Should Also Know How to Approach People,

in order to make them see as you see, and think as you think regarding the merchandise being shown. The purest Anglo-Saxon is more convincing than effort at oratory.

First, prepare the way by getting the attention of the customer. This is done largely by judicious advertising and attractive display; then a conscientious showing of the goods (not your ability, or your oratorical powers, but your merchandise), thereby creating an interest in them. Interest naturally leads to desire, and then close the sale.

Confidence in the Goods

is necessary, as the customer must see that the salesman is sincere, or no amount of talk will avail. The manners and general appearance may create the confidence of the customer in the salesman and therefore in his goods. The salesman's interest in the goods is soon transferred to the customer, and he likes the goods because you do; and in order to keep the confidence you have won you must at all times be honest with your customer, and you can do this by being at the same time honest with yourself, and honest with your house.

Enthusiasm and Loyalty.

Under enthusiasm I would speak of loyalty—loyalty to the interest of your customer, and above all, the house you represent. If you are not in love with your business get out of it, and the quicker the better. There is not a man before me but what can make a good living in any undertaking which he seeks to enter. If you are not in love with your business, and do not believe in the goods you sell, and your ability to buy the right kind of goods and successfully introduce them to your customer, then get out of the business. You must have enterprise and loyalty.

If you cannot speak a good word for your employer, get a new job, and do it now. If you are working for yourself, and you are down and out with yourself, just quit your business, sell out, and travel around for a year and rest up; quit smoking, and eat more beefsteak, and as soon as you are full of ginger and vim then start out right.

Perseverance and Energy.

You must have perseverance. Perseverance means energy—not genius; labor—not love; perspiration—not inspiration. Keeping everlastingly at it always brings success in any undertaking.

The real difference between men is energy. A strong will, a settled purpose, an indomitable disposition to go ahead and succeed is the real difference between great men and little men.

Be Sincere and Honest.

You want to be sincere in your business. Honesty above all things is essential. When you tell a person a thing you yourself want to believe that it is actually so. If it is not true do not say it. Stand back of your statements; if you recommend an article higher than you ought to and the customer brings it back, give him a new article and do not ask any questions, or make him feel that he has encroached on your rights.

How is a person to create another's interest in an article unless he is first interested in it himself, unless he knows about the article; how can he expect to intelligently present his case, and how can he expect to close the sale unless he is really enthusiastic in the presentation of the case, and yet many customers in our stores are actually obliged to sell the goods to themselves, simply because of the diverted and divided minds of your salesmen.

The lack of concentration is a sale killer. The clerk who is thinking backward to the baseball game of yesterday or living in anticipation of the dance to-night is in no condition to sell goods. Forget those things and keep your mind riveted upon your business.

ASAHEL H. PATCH died at his home in Clarksville, Tenn., in his eighty-fourth year, having been active in business until the day he died. He was born at Hamilton, Mass., in November, 1825, removing to Louisville, Ky., in 1850, and to Clarksville in 1875. He manufactured Plows for a number of years and later turned his attention to invention, taking out several patents. He is survived by a widow and three children.

THE WYETH HARDWARE & MFG. COMPANY, St. Joseph, Mo., celebrated its golden anniversary on February 6 by giving a banquet at the Hotel Robidoux to its entire force. The artistic menu was in pamphlet form and contained portraits of Huston Wyeth, president, and W. M. Wyeth, second vice-president.

Price-Lists, Circulars, Etc.

Manufacturers in Hardware and related lines are requested to send us copies of catalogues, price-lists, &c., for our Catalogue Department in New York; and at the same time to call attention to any new goods or additions to their lines, of which appropriate mention will be made, besides the brief reference to the catalogue or price-list in this column.

FORT WAYNE REFRIGERATOR COMPANY, Fort Wayne, Ind.: 28-page illustrated catalogue of Pearl Steel-Glass Refrigerators in great variety for families, florists, cafés, delicatessen stores, &c., some of which are a combination of counter and refrigerator, all constructed of steel and glass.

ARMITAGE & GUINN, Springville, N. Y., illustrated folder in color of the Circling Wave and Trumpet Organ, an amusement attraction with 36 ft. platform seating 80 people, for parks, resorts, carnivals, &c., driven by gasoline or electric motors or steam.

KIRK-LATTY MFG. COMPANY, Cleveland, Ohio: 64-page illustrated bolt department catalogue, containing numerous additions and much special work such as Bolts, Nuts, Screws, Rivets, Rods and Bedstead Material. Also tabulations with valuable data for buyers and consumers, besides the Twentieth Century line of Express Wagons, Velocipedes and Comet Hand Cars from its juvenile vehicle department.

STUDEBAKER BROS. MFG. COMPANY, South Bend, Ind., special buggy edition, No. 15, of "The Studebaker," devoted to the interests of the company.

CHANTRELL HARDWARE & TOOL COMPANY, Reading, Pa.: Illustrated loose leaf catalogue of 354 pages. Department 1 relates to Tools and Hardware Specialties, such as Iron and Steel Hammers, Hatchets, Axes, Screwdrivers, Nail Pullers, Trowels, Sash Chain, Tobacco Cutters, Pliers, Snips, Braces and Wood Screws. Department 2, about 300 pages, embraces a comprehensive line of Builders' and Shelf Hardware.

BAUM'S CASTORINE COMPANY, Rome, N. Y.: 16 page illustrated booklet of Baum's Stable Supplies, including Axle Lubricants, Soaps, Metal Polish, Dressings, Disinfectants, Hoof Packing, Leather Oil, Castor and Sperm Oils and Automobile Supplies.

RALPH BROWN COMPANY, Fifth and Tehama streets, San Francisco, Cal.: 40 page illustrated catalogue of Fishing Tackle for merchants only. It also covers Dog Collars, Tennis Goods, Cutlery, Hunters' Clothing, Ammunition and Baseball Goods.

ELASTIC TIP COMPANY, 370 Atlantic avenue, Boston, Mass.: Illustrated catalogue of Rubber Specialties, including Rubber Chair and Rocker Tips, Plush Furniture Fenders, Rubber Wheel Casters, Mats, Mallets, Heels and kindred goods.

C. E. JENNINGS & Co., 42 Murray street, New York: New discount sheet applying to their catalogue of March, 1907. It is accompanied by a leaflet containing a number of additions and corrections on Ship Augers, Chisel Sets, Hack Saw Blades, Screwdrivers, Emery Wheel Dressers, Squares and Curry Combs.

ENTERPRISE PAINT MFG. COMPANY, Peoria and Van Buren streets, Chicago, Ill.: Illustrated descriptive catalogue of fast color Paints in Oil and in Japan, Enamels, Varnishes, White Lead and Dry Colors.

ROCK ISLAND BATTERY COMPANY, Cincinnati, Ohio: Illustrated booklet and price-list of Rock Island Electric Dry Cells in various styles and sizes.

SPECIALTY MFG. COMPANY, St. Anthony Park, Minn.: Illustrated booklet of the Easy Emptying Grass Catcher, Mechanics' Aprons, Handy Hose Holder and Detachable Hose Rack.

The People's Hardware & Furniture Company has been incorporated in Elkins, W. Va., with a capital stock of $25,000, to conduct a wholesale and retail business in Shelf and Heavy Hardware, Stoves, Tinware, Housefurnishings, Paints, Oils, Sporting Goods and Furniture.

Razor Strop Display Case.

THE Sealskin Swaty Strop Company, 121 West Second street, Ottumwa, Iowa, is offering free to merchants agreeing to sell a reasonable number of Velvac Razor Strops the handsome counter display case here shown. It becomes at once a silent selling force and advertising medium, besides keeping the stock of Strops fresh, salable and free from dust and atmospheric deterioration. The case is 16 in. square and 26 in. high, with the best AA extra glass partitions and French plate mirror hinged door full size of back, the woodwork being quartered oak, golden finish. At the front there is an attractive eight-color sign calling attention to the 36 Strops, which are of but one quality and style but in two sizes.

Free Razor Strop Display Case.

Requests for Catalogues, Etc.

The trade is given an opportunity in this column to request from manufacturers price-lists, catalogues, quotations, &c., relating to general lines of goods.

REQUESTS for catalogues, price-lists, quotations, &c., have been received from the following houses, with whom manufacturers may desire to communicate:

FROM CARPENTER HARDWARE COMPANY, which has been incorporated in Newcastle, Ind., with a capital stock of $10,000, and will handle Shelf Hardware, Stoves, Tinware, Housefurnishings, Agricultural Implements, Paints, Oils and Sporting Goods.

FROM ST. JOHN HARDWARE COMPANY, Canajoharie, N. Y., incorporated with a capital stock of $25,000, handling Shelf and Heavy Hardware, Stoves, Tinware, House Furnishings, Agricultural Implements, Sporting and Athletic Goods.

FROM LILLY HARDWARE COMPANY, which has purchased the business of B. H. Stegge, Varina, Iowa, carrying Shelf and Heavy Hardware, Stoves, Tinware, Agricultural Implements, Paints, Oils, Harness and Harness Specialties.

FROM J. C. CUTHBERT, who has succeeded Cuthbert & Son, in Barron, Wis. The firm recently suffered loss by fire and the business will be continued by the junior member, handling Shelf and Heavy Hardware, Stoves, Tinware, Paints, Oils and Sporting Goods.

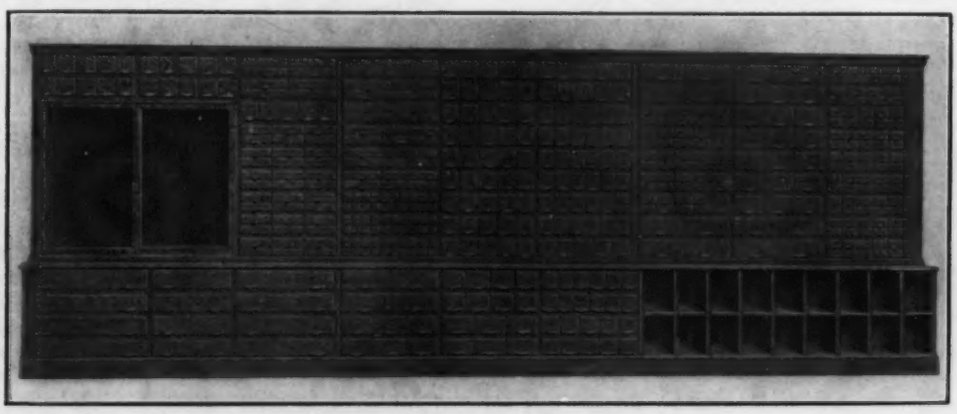
FROM STATEN & KING HARDWARE COMPANY, which has been incorporated in Florence, Ala., with a capital stock of $25,000, to conduct a wholesale and retail business in Shelf and Heavy Hardware, Stoves, Tinware, House Furnishings, Agricultural Implements, Buggies, Harness and Wagons.

FROM L. T. SINTER, who has purchased the business of Davis & Son, Lowry City, Mo., handling Shelf and Heavy Hardware, Stoves, Tinware, House Furnishings, Agricultural Implements, Paints, Oils and Sporting Goods.

FROM RIPLEY HARDWARE COMPANY, which has purchased the stock of the late Andrew King, Ripley, Ohio, carrying a stock of general Hardware.

Heller's Simple System Hardware Shelving in Sections.

W. C. Heller & Co., Montpelier, Ohio, are manufacturing the new combination No. 114 shelving in sections, shown herewith. It is 23 ft. 5 in. long and 8 ft. 3¼ in. high and is furnished complete with boxes and drawers. The shelving is made for both left and right side of store, the difference being that the left or right end of sections is paneled. The base contains 58 drawers of various sizes and the sections above the base are filled with 434 drawers of different sizes. All boxes and drawers have oak fronts, rounded edges, finished in an antique oak finish, pulls attached, with a supply of wood and steel divisions. Accompanying are 100 card frames and one gross sample holders. The section with two sliding unglazed doors has ⅞-in. soft wood back, covered with red burlap. With this case is furnished 24 tool brackets, on which to hang saws, hammers, hatchets and other tools. The doors are fitted with ball bearing sheaves sliding on steel track. Glass is omitted from the doors so as to secure the lowest freight



Heller's Simple System Hardware Shelving in Sections.

rate. The exposure of the shelving is oak, with a rich antique finish. It is remarked that the varnish used cannot be scratched. The shelving is packed in six cases for shipping, so as to reach its destination in the same condition as it leaves the factory. The shipping weight is 3900 lb.

Carriage and Machine Bolts.

The Kirk-Latty Mfg. Company, Cleveland, Ohio, is now manufacturing all sizes and lengths of carriage and machine bolts, in addition to a comprehensive line of stove, tire and sink bolts, stove rods, rivets, cold pressed nuts, special bolts, screws and tacks.

Blair's Husking Gloves and Pins.

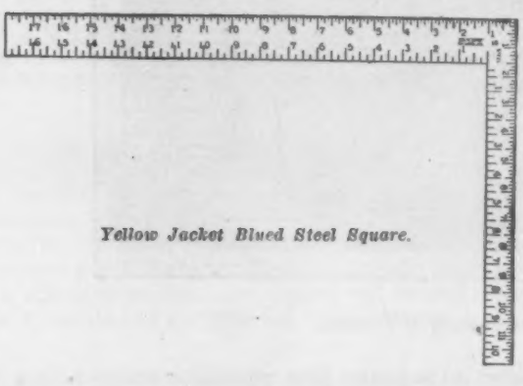
The Blair Husking Glove Company, Bucyrus, Ohio, has put on the market several new styles of huskers for this season's trade. One is No. 160, made of polished steel with strapping of yellow calf. No. 73, of steel, is polished and nickeled, with shield over first finger and large, heavy chrome leather finger guard and strappings. The No. 33 has been rearranged by eliminating half of the metal parts and substituting wide leather hand straps. No. 23 is a two-in-one consolidated shield and cot husking pin. Nos. 55 and 5 are the company's latest in hooks and just patented, being intended to suit all users. Additions have also been made to the line of hook huskers, several styles of which are being finished in polished nickel, a plating plant having been added to the factory equipment.

Knurled Cup Point Nail Sets.

C. E. Jennings & Co., 42 Murray street, New York, have put on the market a new arrangement of their knurled cup point nail sets, trademarked "Arrow Head," this style of nail set having originated with them some years ago. They are made from 9-32 in. crucible steel, carefully hardened and tempered, furnished in polished or blued finishes and fully warranted. They are put up in sets of 12 and 24 each, assorted, in attractive cases with covers, there being a place for each with points up to choose from.

Yellow Jacket Blued Steel Square.

The Southington Hardware Company, Southington, Conn., is manufacturing the Yellow Jacket blued steel square, No. 18 B, here illustrated. One of the features of this product is the 18-in. blade and 12-in. tongue, this modification in size enabling the user to carry it handily in the suit case style of tool kits or tool chests of moderate size, a square of these dimensions serving most purposes. The blade or body is 1½ x 18 in., tongue 1 x 12 in., and the graduations in 1-16, 1-12, ⅛ and ¼ in.



Yellow Jacket Blued Steel Square.

The character of the surface both protects from corrosion and greatly adds to appearance and salability. The figures and graduations in yellow stand out strikingly for instant reading against a rich dark blue, anti-rust, oxidized, gun metal finish, the handsome effect of which is shown in actual colors on a leaflet circular issued. The goods are sold exclusively by C. E. Jennings & Co., 42 Murray street, New York, Mr. Jennings also being president of the Southington Hardware Company.

The Best Semi-Steel Registers.

The Best Register Company, Milwaukee, Wis., is offering registers with faces of cast iron and boxes of sheet steel, the latter being shown herewith. The registers are furnished with faces in Arabian lattice and plain lattice designs, in a large line of sizes and finishes. The sizes conform to the usual standards and therefore fit interchangeably in openings for registers of other makes. A top view of the box with valves closed is shown in Fig. 1. The arrangement is such that but shallow depth is required, and the valves are made with a

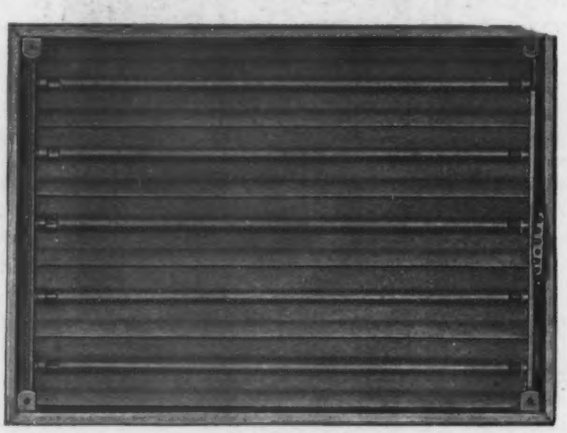


Fig. 1.—Best Semi-Steel Register Box Valves.

convex reinforcing bead, designed to offer no opportunity for the lodgment of dust and dirt. The operating mechanism by which the valves are controlled is seen in Fig. 2. The mechanism is controlled by a vertical wheel, which presents a smooth, flat surface to the edge of the slotted opening in the face of the box. The wheel is made of heavier material than is ordinarily used and is mounted in the box in a simple manner that leaves nothing to the judgment of the assembler. A positive tension for maintaining the valve in a partially open or closed position is provided, which, notwithstanding, permits free action in response to pressure on the valve operating wheel. The valves, it is claimed, work noiselessly, turning on slotted steel trunnions wedged into the valves. The box is formed of sheet steel with lap joint corners, the lap being formed on the inside to secure greater rigidity. Made in this way, there are no projections or offsets to prevent a close fit to the tin register box, which is further facilitated by a slight taper of the box. Extra stiffness is secured by an inward fold of the upper edge of the box on which the face lies. The face is fastened to the box by four screws threaded into heavy lugs riveted to the side of the box. Particular emphasis is laid on the advantages derived from the combination of iron faces and pressed steel box. It is pointed out that because of their rigidity the cast faces will not bend and do not require the support of reinforcing bars; that when used as floor registers they lie flat in the border or on the floor without sagging, and that they have an unusually large air outlet area. The company guarantees that in both the Arabian and plain lattice designs the outlet area is 66 2-3 per cent. in the smaller sizes and over 70 per cent. in the larger sizes, and, notwithstanding the small percentage of remaining metal, there is ample strength for all requirements.

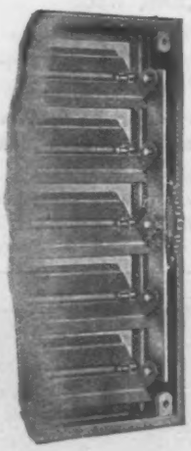


Fig. 2.—Operating Mechanism Controlling Best Register Valves.

Iron and Brass Lined Pump Cylinders.

The accompanying illustrations represent a new line of pump cylinders which the Hayes Pump & Planter Company, Galva, Ill., has placed on the market. Fig. 1 shows a sectional view of a polished iron cylinder. These cylinders are also furnished in brass lined and flush cap seamless brass. They have two leather plungers and are made all lengths from 12 in. up. The iron and brass lined cylinders are equipped with Boss valves, as shown in Fig. 2. This valve is constructed of brass, very stiff and strong, and will stand severe use. The valve poppet is faced with pure rubber, completely incased on the sides

Fig. 1.—Sectional View of Polished Iron Pump Cylinder.

Fig. 2.—Boss Valves for Cylinders.

Fig. 3.—Boss Valve for Flush Cap Brass Cylinder.

to prevent expansion by the action of the water or heavy pressure in deep wells. This valve has an extra large intake opening and short lift, giving an unrestricted flow of water on every stroke, a minimum loss of water in the return valve and less strain or pounding on the valve seat. The seat is slightly beveled, which prevents sand lodging on its surface. The valve is held in the cylinder by a leather gasket on either side, and can be used on other makes of iron or brass cylinders by simply reversing the caps. They will be sold separately when desired. Fig. 3 shows the Boss valve for flush cap brass cylinders, and while differing in construction from Fig. 2, the same features described above have been retained.

The Wiard Reversible Sulky Plow.

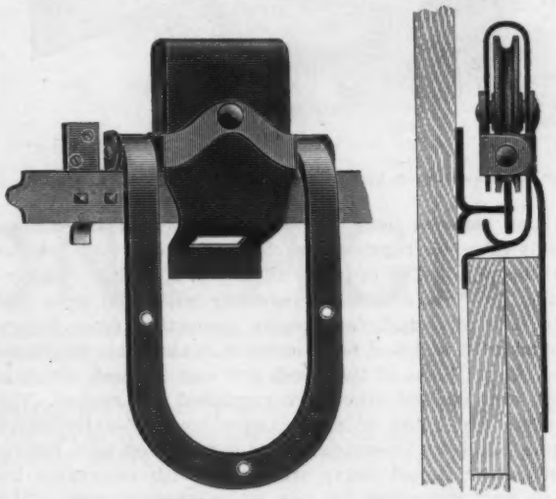
The plow, shown in the accompanying illustration, manufactured by the Wiard Plow Company, Batavia, N. Y., has two plows, one right and one left hand, both operated by separate levers and having an automatic power lift. The plows have high grade chilled iron or soft center moldboards, and either forged steel or cast iron points as ordered, and can be fitted with jointer or plain cotter, as desired. The plow is referred to as simple in construction, easy to handle and lightly constructed, the material being mostly steel and malleable iron to make it strong and durable. It is adapted to all soils, leaves no ridges or dead furrows and does excellent work on either level land or side hill. One of the special features of the plow is the patented flanged wheel which runs in the bottom of the last furrow and next to the land, acting as a guide to the plow and giving a perfectly uniform width of furrow. This sulky plow is intended to be run and adjusted precisely the same as a hand plow. Among some of the new features and improvements added to the plow is the pole shifting device. This is shown in the illustration with the long pole attached as used with two horses abreast. It can also be arranged for three horses abreast. The shifter is operated by a friction lever, which enables the plowman, while riding or walking, to shift the pole either to the

The Wiard Reversible Sulky Plow.

right or left at any angle desired to suit the team and get the proper width of furrow, either on flat land or side hill, without side draft. The new roller clevis, indicated by the arrow, to which the whiffletree is attached, works freely on the bail and shifts automatically, so that the draft will always be direct from the end of furrow plow.

Sharon Flexible Barn Door Hanger.

The Sharon Hardware Mfg. Company, Sharon, Pa., offers the Sharon barn door hanger, here shown. The reinforced frame is said to double the strength of ordinary swing hangers by giving the axle double support and relieving the cover of the full weight of a heavy door. The wheels run on anti-friction roller bearings, and the axle is galvanized as a protection from rust. The drop strap owing to the connection over the center of



Sharon Flexible Barn Door Hanger, Also End View.

the rail insures an even bearing on the axle, and with the short clevis projecting downward inside clamps the door and holds it rigidly in position, as indicated by the end view. The door may be swung outward as desired without causing appreciable strain on hanger or rail, and from the construction is not liable to be derailed. The hanger is packed one pair complete with bolts in a neatly labeled carton, 12 cartons in a case, thus enabling the merchant to carry the goods conveniently on the shelves and have them tidy in appearance.

Sargent Seamless Porcelain Refrigerator.

The Brunswick-Balke-Collender Company of New York, 30-34 West Thirty-third street, New York City, has just put on the market the Sargent patent seamless porcelain refrigerator, two styles of which are here shown. The striking feature of this construction is the absence of seams, corners and joints in the interior of the refrigerator, which consists of a crock molded in a single piece of a claylike substance like pottery, with large oval openings top and bottom in the center wall of double boxes, for air circulation. The crock is baked and glazed with four coats of porcelain enamel, each coat being baked after every application. The solid walls vary from 2½ to 4½ in. approximately, according to size, the center walls, where they exist, being thickest. This method of manufacture makes possible food and ice chambers that are seamless, cornerless and jointless; cornerless signifiying rounded instead of square corners for greater ease in cleansing. As there are no cracks or crevices for the secretion of organic matter or germs resulting from decomposed substances, it is obviously easy to keep the interior sanitary and hygienic. The

Fig. 1.—Sargent Seamless Porcelain Refrigerator, Single.

cabinet exterior is built around the crock in various kinds of wood regularly, such as elm, oak and ash, or can be supplied to order in any wood specified. The refrigerators are also made regularly with opal glass and tile exteriors, and for greater protection from injury bound with nickeled brass corners, which also heightens the effect. Some of the woods are wax finished, which is very durable, and others are varnished and rubbed. The shelves are made of strong wire mesh, heavily silver tinned, and the ice compartment is protected by a removable silver tinned heavy wire cage with removable ice rack and removable ice pan of galvanized steel. The drain tube can also be taken out for a thorough cleaning, and is protected underneath by an automatic or self-closing trap of cast iron, which by means of a chain underneath the box can be tripped at will, but which being counterbalanced automatically rights itself. The crock is insulated between its outer walls and the cabinet work with granulated cork, and the hardware trim, including combination lever lock and hinges, are nickeled cast brass. Additional protection in the ice chamber is provided by means of enameled metal straps which project about ⅝ in. to serve as cushions for the wire cage, and which are enameled the four coats after attachment to the crock. When cleaning, the shelves, ice cage, rack and pan may be instantly removed. The doors are all rabbeted to make close contact with the casing, and lined with glass. These refrigerators are now obtainable in a total of 14 stock sizes and styles, listing from $22.50 to $60, with wood exterior, and from $33 to $78 with glass exterior. They weigh from 250 to 1000 lb., and the ice capacities range from 30 to 250 lb. The point is made by the company that these refrigerators are sold at but little more than zinc lined refrigerators, and that they

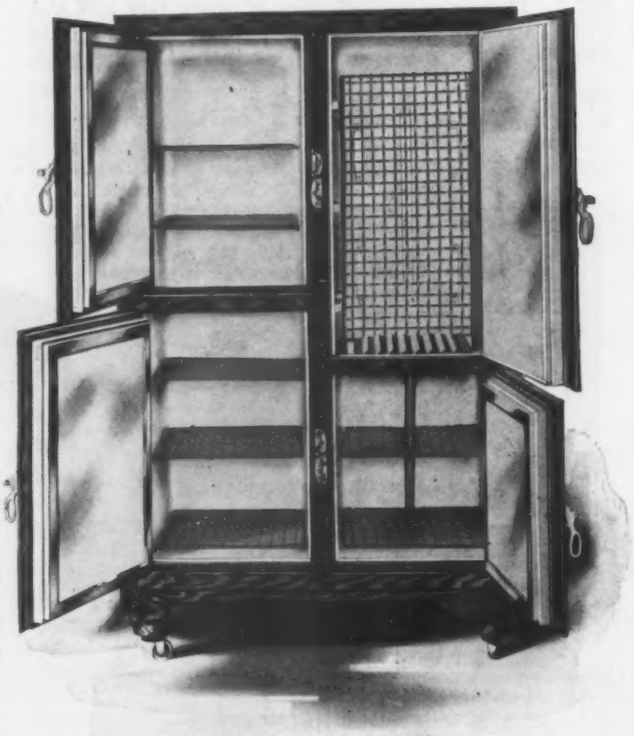


Fig. 2.—Sargent Seamless Porcelain Refrigerator, Double.

will be built permanently into new buildings if desired, or substituted for those already built in. The company has recently received basic patents on construction, and other patents are pending.

Pearson Adjustable Window Ventilator.

The Bailey Reflector Company, 547 Fourth avenue, Pittsburgh, Pa., has put on the market the Pearson

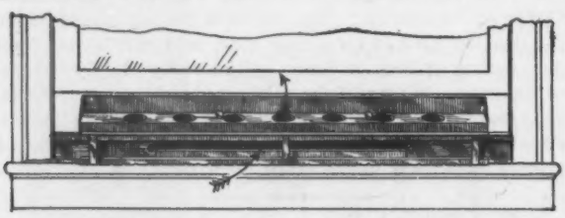


Fig. 1.—Outside View of Ventilator Before Closing the Sash.

adjustable ventilator, as illustrated herewith. There are two sizes, No. 1 adjustable to sashes 24 to 30 in. in width

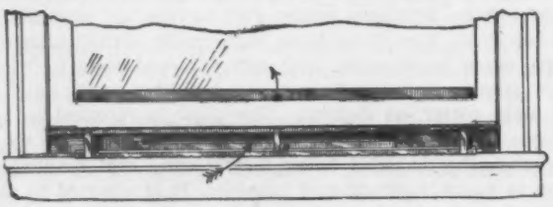


Fig. 2.—Outer View After Closing Sash.

and No. 2 for widths of 30 to 46 in. The purpose of this ventilator is to insure a current of fresh outer air without direct draft and to afford a medium for the extraction of overheated and vitiated air. The ventilator has several adjustable vents, covered with close mesh brass

screen wire cloth, by which the volume of fresh air can be regulated. It is explained that when air is blown toward the window having the ventilator installation, there is a current of outdoor air entering the room, but as soon as the direction of the wind changes a suction is established which draws out the inner air. The standard ventilators are made of heavy terne plate finished in

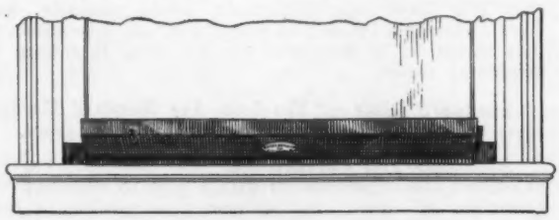


Fig. 3.—Interior View with Sash Closed.

copper bronze, but can be supplied in any metal, including brass, copper, zinc or galvanized iron and in any specified finish to match the wood trim. For large office and factory buildings estimates will be sent on application.

The B. & C. Double End Adjustable S Nut and Pipe Wrench.

Bemis & Call Hardware & Tool Company, Springfield, Mass., is offering the double end S wrench, No. 51, made only in 6-in. size, herewith illustrated. This is referred to by the company as a combination of its Nos. 48 and

The B. & C. Double End Adjustable S Nut and Pipe Wrench No. 51.

50 adjustable S wrenches, and as made of the same high grade material. The nut end of the wrench opens ¾ in. and the other end takes pipe from ⅛ to ½ in.

PAINTS, OILS AND COLORS

Animal, Fish and Vegetable Oils—

	℔ gal. bbls.
Linseed, Western, Raw	.55 @56
State, Raw	.55 @56
City, Raw	.56 @57
Boiled, 1¢ ℔ gal. advance on Raw.	
Raw, Calcutta, in bbls.	.75 @..
Lard, Prime, Winter	.75 @80
Extra No. 1	.56 @..
No. 1	.48 @..
Cotton-seed, Crude, f.o.b. mill	.33½@34½
Summer, Yellow, prime	.5.55@5.62
Summer, White	.5.80@5.90
Yellow Winter	.6.20@6.30
Tallow, Acidless	.56 @..
Menhaden, Brown, Strained	.33 @..
Northern Crude	@..
Southern	.32 @..
Light Strained	.33 @..
Bleached Winter	.36 @..
Cocoanut, Ceylon	℔ lb 6¾@ 7
Cochin	℔ lb 7¼@ 7⅝
Cod, Domestic, Prime	.36 @..
Newfoundland	.38 @..
Red Elaine	.45 @..
Saponified	℔ lb .. @ 6¼
Olive, Yellow	.$1.50@....
Neatsfoot, Prime	.57 @..
Palm, Lagos	℔ lb 6⅛@ 6¼

Mineral Oils—

	℔ gal.
Black, 29 gravity, 25@30 cold test	.13 @13½
29 gravity, 15 cold test	.13½@14
Summer	.12½@13
Cylinder, light filtered	.20½@21
Dark, filtered	.18 @19
Paraffine, 903-907 sp. gravity	.14½@15
903 sp. gravity	.13½@14
883 sp. gravity	.11 @11½
Red	.13½@14

Miscellaneous—

	℔ ton
Barytes:	
White, Foreign	$18.50@20.50
Amer., floated	17.00@18.00
Off color	12.50@15.00
Chalk, in bulk	3.00@ 3.40
China Clay, Imported	11.50@18.00
Cobalt, Oxide	1.45@ 2.60
Whiting, Commercial	.45@50
Gilders	.52@ .64
Ex. Gilders	.56@ .68

Putty, Commercial—℔ 100 lb

In bladders	$1.70@2.00
In bbls. or tubs, 100 lb	1.20@1.45
In 1 lb to 5 lb tins	2.65@3.25
In 12½ to 50 lb tins	1.50@1.90

Spirits Turpentine—℔ gal.

In Machine bbls.	43½@44
In Oil bbls.	43 @43½

Glue—

	℔ lb
Cabinet	.12 @15
Common Bone	.7½@ 9
Extra White	.18 @24
Fish, liquid, 50 gal. bbls., per gallon	.60 @1.20
Foot Stock, White	.12 @14
Foot Stock, Brown	.9 @11
German Common Hide	.10 @12
German Hide	.12 @18
French	.10 @40
Irish	.13 @16
Low Grade	.10 @12
Medium White	.14 @19

Gum Shellac—

	℔ lb
Bleached, Commercial	.17½@18
Bone Dry	.22½@23
Button	.20 @30
Diamond I.	.34 @35
Fine Orange	.25 @28
A. C. Garnet	.18 @19
G. A. L. Garnet	.16 @17
Kala Button	.12 @13
D. C.	.35 @36
Octagon B.	.28 @29
T. N.	.18 @19
V. S. O.	.31 @32

Colors in Oil—

	℔ lb
Black, Lampblack	.12 @14
Blue, Chinese	.36 @46
Blue, Prussian	.32 @36
Blue, Ultramarine	.13 @16
Brown, Vandyke	.11 @14
Green, Chrome	.12 @16
Green, Paris	@24
Sienna, Raw	.12 @15
Sienna, Burnt	.12 @15
Umber, Raw	.11 @14
Umber, Burnt	.11 @14

White and Red, Lead &c.—

	℔ lb
Lead, English white, in Oil	.10¼@10¾
Lead, American White:	
Dry and in Oil, 100, 250 and 500 lb kegs	6¾
Dry and in Oil, 25 and 50 lb kegs	7
Dry and in Oil, 12½ lb kegs	7¼
In Oil, 25 lb tin pails	7¼
In Oil, 12½ lb tin pails	7⅝
In Oil, 1, 2, 3 and 5 lb tin cans, ass't	8¼
Red Lead and Litharge:	
In 100 lb kegs	7
In 25 and 50 lb kegs	7¼
In 12½ lb kegs	7½
In lots of less than 500 lbs, ½¢ ℔ lb advance over above prices of White and Red Lead and Litharge.	
Lead, American. Terms: On lots of 500 lbs and over, 60 days, or 2% for cash if paid in 15 days from date of invoice.	

Zinc, Dry—

	℔ lb
American, dry	5½@ 5¾
Red Seal (French process)	6¾@ 7
Green Seal	7¼@ 7½
German Red Seal (French process)	7 @7¼
Green Seal	7½@ 7⅞
White Seal	8¼@ 9
French, Red Seal	8¾@ 8⅞
Green Seal	10⅝@10⅞

Dry Colors—

	℔ lb
Black, Carbon	.6½@10
Black Drop, American	.3½@ 8
Black Drop, English	.5 @15
Black, Ivory	.16 @20
Lamp, commercial	.4 @ 6
Blue, Celestial	.4 @ 6
Blue, Chinese	.30 @31
Blue, Prussian, Domestic	.28 @30
Blue, Ultramarine	.5 @15
Brown, Spanish	½@ 1
Carmine, No. 40	.$3 10@3 25
Green, Chrome, ordinary	.3½@ 5
Green, Chrome, pure	.17 @25
Ocher, American	℔ ton $12.00@15.00
American Golden	.4 @ 5
French	.1¼@ 2
Foreign Golden	.3 @ 4
Orange Mineral, English	.10 @12
French	.12¾@13
German	.12 @13
American	.9 @10
Red, Indian, English	.5 @ 7
American	.3 @ 3¼
Red, Turkey, English	.4 @10
Red, Tuscan, English	.7 @10
Red, Venetian, Amer.	℔ 100 lb $0.75@1.50
English	℔ 100 lb $1.15@1.60
Sienna, Italian, Burnt and Powdered	.3 @ 9
Italian, Raw, Powdered	.3 @ 7
American, Raw	.2¼@ 3
American Burnt and Pow'd	.2¼@ 3
Talc, French	℔ ton $18.00@25.00
American	℔ ton 15.00@25.00
Terra Alba, French	℔ 100 lb .80@1.00
English	℔ 100 lb .90@1.00
American	℔ 100 lb, No. 1, .75@ .80
American	℔ 100 lb, No. 2, .60@ .65
Umber, T'key, Bnt. & Pow.	.2½@ 3
Turkey, Raw and Powdered	.2¾@ 3
Burnt, American	.2 @2½
Raw, American	.2 @ 2½
Yellow, Chrome, Pure	.12¾@14
Oxide Red, American	.2 @ 7½
Vermilion, English, Imported	@70
Chinese	.$0.90@1.00

THE IRON AGE

The oldest paper in the world devoted to the interests of the Hardware, Iron, Machinery and Metal Trades, and a standard authority on all matters relating to those branches of industry.

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Current Hardware Prices.

General Goods.—In the following quotations General Goods—that is, those which are made by more than one manufacturer—are printed in *Italics*, and the prices named, unless otherwise stated, represent those current in the market as obtainable by the fair retail Hardware trade, whether from manufacturers or jobbers. Very small orders and broken packages often command higher prices, while lower prices are usually given to larger buyers.

Special Goods.—Quotations printed in small type (Roman) relate to goods of particular manufacturers, who request the publication of the prices named and are responsible for their correctness. They usually represent the prices to the small trade, lower prices being generally obtainable by the fair retail trade, from manufacturers or jobbers.

Range of Prices.—A range of prices is indicated by means of the symbol @. Thus 33⅓ @ 33⅓ & 10% signifies that the price of the goods in question ranges from 33⅓ per cent. discount to 33⅓ and 10 per cent. discount.

Names of Manufacturers.—For the names and addresses of manufacturers see the advertising columns and also THE IRON AGE DIRECTORY, issued annually, which gives a classified list of the products of our advertisers and thus serves as a DIRECTORY of the Iron, Hardware and Machinery trades.

Standard Lists.—"The Iron Age Standard Hardware Lists" contains the list prices of many leading goods.

Additions and Corrections.—The trade are requested to suggest any improvements with a view to rendering these quotations as correct and as useful as possible to Retail Hardware Merchants.

Adjusters, Blind—
Columbian and Domestic....33⅓%
North's 10%
Upson's Patent, ₱ gro., $29.90....10%
Zimmerman's—See Fasteners, Blind.

Window Stop—
Ives' Patent....10%
Ives' Stop Bead Screws and Washers 10%
Taplin's Perfection....10%

Ammunition—See *Caps, Cartridges, Shells, &c.*

Anti-Rattlers—
Fernald Mfg. Co. Burton Anti-Rattlers, ₱ doz. pairs, Nos. 1, $0.75; 2, $0.80; 4, $1.00; 5, $0.50.
Fernald Quick Shifter, ₱ doz. pairs ....$2.00@$3.00

Anvils—American—
Eagle Anvils....₱ lb 6¢
Hay-Budden, Wrought....9½@9¾¢
Trenton ....₱ lb 9½@9¾¢

Imported—
Swedish Solid Steel Paragon, ₱ lb ....10@10¾¢
Swedish Solid Steel Sisco, Superior, ₱ lb....10@10½¢
Peter Wright & Sons, ₱ lb, 84 to 349 lb, 11¢; 350 to 600 lb, 11½¢.

Anvil, Vice and Drill—
Millers Falls Co., $18.00....15&10%

Apple Parers—See *Parers, Apple, &c.*

Aprons, Blacksmiths'—
Livingston Nail Co....10%

Augers and Bits—
Com. Double Spur....80%
Jennings' Pats., Bright.65&10@70%
Black Lip or Blued...65@65&5%
Boring Mach. Augers....70%
Car Bits, 12-in. twist....40&10%
Ford's Auger and Car Bits....40&5%
Ft. Washington Auger Co., Conard's 35%
Forstner Pat. Auger Bits....25%
C. E. Jennings & Co.:
No. 10 ext. lip. R. Jennings' list, 25&7½%
No. 30, R. Jennings' list....50%
Russell Jennings'....25&15&2½%
L'Hommedieu Car Bits....15%
Mayhew's Countersink Bits....20%
Pugh's Black....20%
Pugh's Jennings' Pattern....35%
Snell's Auger Bits....60%
Snell's Bell Hangers' Bits....60%
Snell's Car Bits, 12-in. twist....60%
Snell's King Auger Bits....50%
Swan's ....65&10@70%
Swan's, Jennings' Pattern....50%
Wright's Jennings' Bits....50%

Bit Stock Drills—
See *Drills, Twist.*

Expansive Bits—
Clark's Pattern, No. 1, ₱ doz., $28; No. 2, $18....60&10%
Ford's, Clark's Pattern...60&5@60&10%
C. E. Jennings & Co., Steer's Pat...25%
Lavigne Pat., small size, $18.00; large size, $36.00....60&10%
Swan's 60%

Gimlet Bits—
Per gro.
Common Dbl. Cut....$3.00@3.25
German Pattern, Nos. 1 to 10, $4.75; 11 to 13, $5.75

Hollow Augers—
Bonney Pat., per doz..$5.50@6.00
Ames ....20&10%
Universal 20%

Ship Augers and Bits—
Ship Augers....40&10@—%
Ford's ....33⅓&5%
C. E. Jennings & Co.:
L'Hommedieu's 6%
Watrous' ....33⅓&7½%
Snell's 48%

Awl Hafts—See *Handles, Mechanics' Tool.*

Awls—
Brad Awls:
Handled ....gro. $2.75@3.00
Unhdled, Shldered...gro.63@66¢
Unhandled, Patent..gro.66@70¢
Peg Awls:
Unhandled, Patent..gro. 31@31¢
Unhdled, Shldered..gro. 65@70¢
Scratch Awls:
Handled, Com...gro. $3.50@4.00
Handled, Socket..gro.$11.50@12.00
Elmore Tool Mfg. Co.:
Tinners' and Brad Awls....35&7%
Scratch Awls....60%

Awl and Tool Sets—See *Sets, Awl and Tool.*

Axes—
Single Bit, base weights: Per doz.
First Quality....$4.75@5.00
Second Quality....$4.25@4.50
Double Bit, base weights:
First Quality....$7.00@7.50
Second Quality....$6.50@6.75

Axle Grease—
See *Grease, Axle.*

Axles—
Iron or Steel.
Concord, Loose Collar...4¼@4½¢
Concord, Solid Collar....4½@5 ¢
No. 1 Common, Loose...3½@4 ¢
No. 1½ Com., New Style..4¼@4¾¢
No. 2 Solid Collar....4¼@4¾¢
Half Patent:
Nos. 7, 8, 11 and 12....70%
Nos. 13 to 14....70%
Nos. 15 to 18...70&10@70&10&5%
Nos. 19 to 22...70&10@70&10&5%

Boxes, Axles—
Common and Concord, not turned ....lb., 5@6¢
Common and Concord, turned, lb., 6@7¢
Half Patent....lb., 9½@10¢

Bait—Fishing—
Hendryx:
A Bait....20%
B Bait....25%
Competitor Bait....20&5%

Balances—Sash—
Caldwell new list....50&10%
Pullman ....50&10%

Spring—
Light Spring Balances..60@60&5%
Chatillon's:
Light Spg. Balances....50@50&10%
Straight Balances....40@40&10%
Circular Balances....50&10%
Large Dial....30%

Barb Wire—See *Wire, Barb.*

Bars—Crow—
Steel Crowbars, 10 to 40 lb.... per lb., 2¼@2½¢

Towel—
No. 10 Ideal, Nickel Plate..₱ gro. $2.50

Beam, Scale—
Scale Beams....40%
Chattillon's No. 1....30%
Chatillon's No. 2....40%

Beaters, Carpet—
Holt-Lyon Co.:
No. 12 Wire Coppered ₱ doz. $0.80; Tinned $0.85
No. 11 Wire Coppered ₱ doz. $1.15; Tinned $1.20
No. 10 Wire Tinned....₱ doz. $1.50

Beaters Egg—
Dover Stamping & Mfg. Co.:
Genuine Dover, per gro., No. 1, Tumbler Size, $1.50; No. 2, Family Size, $7.50; No. 3, Extra Family Size, $24.00; No. 4, Hotel Size, $30.00.
Holt-Lyon Co.:
Holt, per doz., No. 5, Jap'd. $0.80; No. A, Jap'd, $1.15; No. B, Jap'd, $1.85; No. 6, Jap'd, $1.65.
Lyon, Jap'd, per doz., No. 2, $1.35.
Taplin Mfg. Co.:
Improved Dover, per gro., No. 60, $6.00; No. 75, $6.50; No. 100, $7.00; No. 102, Tin'd, $8.50; No. 150, Hotel, $15.00; No. 152, Hotel Tin'd, $17.00; No. 200, Tumbler, $8.50; No. 202, Tumbler Tin'd, $9.50; No. 300, Mammoth, per doz., $25.00.

Bellows—
Blacksmith, Standard List:
Split Leather....60&10@65%
Grain Leather....50@60&10%

Net Prices.

Hand—					
Inch..	*6*	*7*	*8*	*9*	*10*
Doz..	*$5.00*	*5.50*	*6.00*	*6.50*	*7.50*

Molders—				
Inch..	*10*	*12*	*14*	*16*
Doz..	*$7.50*	*9.00*	*12.00*	*15.00*

Bells—Cow—
Wrought Cow Bells....75%
Jersey ....75&10%
Texas Star....50%

Door—
Home, R. & E. Mfg. Co.'s....35&10%

Hand—
Polished, Brass....60@60&10%
White Metal....60@60&10%
Nickel Plated....50&10%
Swiss ....50&10%
Cone's Globe Hand Bells....33⅓@35%

Miscellaneous—
Farm Bells....lb., 2¼@2½¢
Church and School....60@60&10%

Belting—Leather—
First Quality, Ex. Hy., Strictly Short Lap....60&10%
Standard ....70&10@70&10&5%
Light Double....75&10%
Cut Leather Lacing....45@50%
Leather Lacing Sides, per sq. ft.25¢

Rubber—
Competition (Low Grade), 70&10@75%
Standard ....60&10@70%
Best Grades....40@50%

Bench Stops—
See *Stops, Bench*

Benders and Upsetters, Tire—
Green River Tire Benders and Upsetters 20%

Bicycle Goods—
John S. Leng's Son & Co.'s 1908 list:
Chain, Parts, Spokes....50%
Tubes 60%

Bits—
Auger, Gimlet, Bit Stock Drills, &c.—See *Augers and Bits.*

Blocks Tackle—
Common Wooden....75@75&5%
B. & L. B. Co.:
Boston Wood Snatch, 50%; Eclipse Steel, 75%; Hollow Steel, 50&10%; Star Wire Rope, 50%; Tarbox Metal Snatch, 50%; Tarbox New Style Steel, 50&10%; Wire Rope Snatch, 50%.
Lane's Patent Automatic Lock and Junior 30%
See also Machines, Hoisting.

Boards, Stove—
Paper and Wood Lined....55%
Embossed 55%

Boards, Wash—
See *Washboards.*

Bobs, Plumb—
Keuffel & Esser Co....33⅓&10%

Bolts
Carriage, Machine, &c.—
Common Carriage (cut thread): ⅜ x 6 and smaller....75&5%
Larger and longer....70&5%
Common Carriage (rolled thread): ⅜ x 6, smaller and shorter, 75&10&5%
Phila. Eagle, $3.00 list...80@—%
Bolt Ends, with C. & T. Nuts, 70&10%
Machine (Cut Thread): ⅜ x 4 and smaller....75&10%
Larger and longer....70&10%

Door and Shutter—
Cast Iron Barrel, Japanned, Round Brass Knobs:

Inch	*3*	*4*	*5*	*6*	*8*
Per doz..	*$0.30*	*.35*	*.45*	*.60*	*.80*

Cast Iron Spring Foot, Jap'd:

Inch	*6*	*8*	*10*
Per doz.	*$1.20*	*1.50*	*2.25*

Cast Iron Chain, Flat, Japanned:

Inch	*6*	*8*	*10*
Per doz.	*$1.00*	*1.40*	*1.65*

Cast Iron Flat Shutter, Jap'd, Brass Knobs:

Inch	*6*	*8*	*10*
Per doz.	*$0.75*	*.95*	*1.25*

Wrought Barrel Japanned, 80&10@80&10&5%
Barrel Bronzed....60&10%
Spring ....70&10@70&10&10%
Shutter ....50&5@50&10&5%
Square Neck....75@75&10%
Square ....70&10&10@80%
Ives' Mortise....10%
Ives' Wrought Metal....10%

Expansion—
F. H. Evans' Crescent....40@0%
Richards Mfg. Co....55&10%
Star Expansion Bolt Co.:
Star, Lag Screw Type..60&10&5&2½%
Star, Wood Screw Type....40%
Star, Machine, Single Wedge....60%
Star, Machine, Double Wedge....60%
Steward & Romain Mfg. Co.:
Style No. 13, Double....60%
Style No. 1, Single....60%
Style No. 100, Dbl. Jaw, Single..55%
Lag Screw....60%

Plow and Stove—
Plow ....65&5@70%
Stove ....85@85&5%

Tire—
Common Iron....80%
Norway Iron....80%
American Screw Co.:
Norway Phila., list Oct. 16, '84...80%
Eagle Phila., list Oct. 16, '84...82½%
Bay State, list Dec. 28, '99....80%
Franklin Moore Co.:
Norway Phila., list Oct. 16, '84...80%
Eagle Phila., list Oct. 16, '84...82½%
Eclipse, list Dec. 28, '99....80%
Russell, Burdsall & Ward Bolt & Nut Co.:
Empire, list Dec. 28, '99....80%
Norway Phila., list Oct. '84....80%
Eagle 82½%
Shelton Co.:
Tiger Brand, list Dec. 28, '99....80%
Phila., Eagle, list Oct. 16, 1884..82½%
Upson Nut Co.:
Tire Bolts....72½%

Borers, Bung—
Borers Bung, Ring, with Handle:

Inch....	*1¼*	*1½*	*1¾*	*2*
Per doz...	*$4.80*	*5.60*	*6.40*	*8.00*
Inch....		*2¼*	*2½*	
Per doz....		*$8.65*	*11.50*	

Enterprise Mfg. Co., No. 1, $1.25; No. 2, $1.75; No. 3, $2.50 each....25%

Boxes, Mitre—
C. E. Jennings & Co....25%
Langdon, New Langdon and Langdon Improved, 20&10%; Langdon Acme ....15&10%
Perfection 40%
Seavey 45%

Braces—
Common Ball, American..$1.50@$1.75
Barber's ....50&10&10@60&10%
Fray's Genuine Spofford's....60%
Fray's No. 61, 166, 206, 614....50%
C. E. Jennings & Co....50&5%
Mayhew's Ratchet....60%
Mayhew's Quick Action Hay Pat...50%
Millers Falls Drill Braces....25&10%
P., S. & W. Co., Peck's Pat....60&10%

Brackets—
Wrought Steel....75&10&5@80%
Bradley Metal Clasp...80&10@80&10&5%
Griffin's Pressed Steel....75@75&10%
Griffin's Folding Brackets....70&10%
Taplin Victor Handy Egg Beater Bracket ....₱ doz. $1.50

Bright Wire Goods—
See *Wire and Wire Goods.*

Broilers—
Kilbourne Mfg. Co....75&20%
Wire Goods Co....75%

Buckets, Galvanized—
M'fr's list, price per gross.

	Quart..	*10*	*12*	*14*
Water, Light..	*$28.35*	*30.75*	*34.75*	
Water, Ex. Hvy..	*46.85*	*49.35*	*53.25*	
Fire, Rd. Btm..	*33.50*	*35.90*	*39.90*	
Well	*37.35*	*41.35*	*48.35*	

10&7½&5&5%

Bull Rings—See *Rings, Bull.*

Butts—Brass—
Wrought, High List, Oct. 26, '06.65%
Cast Brass, Tiebout's....40&10%

Cast Iron—
Fast Joint, Broad....40&10@50%
Fast Joint, Narrow...40&10@50%
Loose Joint....70&10@75%
Loose Pin....70&10@75%
Mayer's Hinges....70@70&5
Parliament Butts....70@70&5

Wrought Steel—
Bright.
Light Narrow, Light Reversible ....70&5%
Reversible and Broad..70&5%
Loose Joint, Narrow, Light Inside Blind, &c....70%
Back Flaps, Table Chest..65% Japanned.
Light Narrow, Loose Pin, 40&5%
Light Narrow, Ball Tip..60%
Broad ....40&5%
Steeple Tipped....70%
Ball Tipped....70%

Extra, 10@—

Cages, Bird—

Hendryx Brass: Series 3000, 5000, 1100, net list; 1200, 15%; 200, 300, 900 ..... 30%
Hendryx Bronze: Series 700, 800.... 30%
Hendryx Enameled..... 35%

Calipers—See *Compasses.*

Calks, Toe and Heel—

Blunt, 1 prong, per 100 lb., $3.50@$3.85
Sharp, 1 prong, per 100 lb., $4.00@$4.35
Burke's, 1 pg. Blunt Toe, 3¾¢; 2 pg. Blunt Toe, 4¼¢; 1 pg. Sharp Toe, 4¼¢; 2 pg. Sharp, 4¾¢; Blunt Heel, 4¼¢; Sharp Heel..... 4¾¢
Lautier, Blunt, 4@4¼¢; Sharp, 4½@4¾¢
Perkins', Blunt, ℔ lb, 3.65¢; Sharp, 4.15¢

Can Openers—

See *Openers, Can.*

Caps, Percussion—

Eley's E. B...... 52@55%
G. D...... *per M* 34@35¢
F. L...... *per M* 40@42¢
G. E...... *per M.* 48@50¢
Musket..... *per M* 62@63¢

Primers—

Berdan Primers, $2 per M.. 20&10%
Primer Shells and Bullets.. 15&10%
All other primers per M. $1.52@1.60

Carpet Stretchers—

See *Stretchers, Carpet.*

Cartridges—

Blank Cartridges:
32 C. F., $5.50..... 10&5%
38 C. F., $7.00..... 10&5%
22 cal. Rim, $1.50..... 10&5%
32 cal. Rim, $2.75..... 10&5%
B. B. Caps, Con. Ball, Swgd. $1.90
B. B. Caps, Round Ball..... $1.40
Central Fire..... 25%
Target and Sporting Rifle.. 15&5%
Primed Shells and Bullets.. 15&10%
Rim Fire, Sporting..... 50%
Rim Fire, Military..... 15&5%

Casters—

Bed..... 65&10@70%
Plate..... 60@60&5%
Philadelphia..... 70&10@75%
Acme, Ball Bearing..... 35%
Gem (Roller Bearing)..... 70&10&10&5%
Steel Gem (Roller Bearing)..... 70%
Standard Ball Bearing..... 45%
Yale (Double Wheel) low list... 40&10%

Cattle Leaders—

See *Leaders, Cattle.*

Chain, Proof Coil—

American Coil, Straight Link:

3-16	¼	5-16	⅜	½	⅝
$7.70	5.10	4.15	3.50	3.30	3.10

⅝-⅞-1 1⅛ to 1¼ inch.
$3.00 3.10
In cask lots, deduct 25¢.
German Coil..... 70&5%
German Pattern Coil:
6-0 to 1..... 70&10&5%
2 and 3..... 60&10&10@70%
4, 5 and 6..... 50&10@50&10&5%

Halter—

Halter Chains..... 60&5@60&10%
German Pattern Halter Chains, list July 24, '97..... 70&5%
Covert Mfg. Co.:
Halter..... 35&5%

Cow Ties—

See *Butters and Ties.*

Trace, Wagon, &c.—

Traces, Western Standard: 100 pr.
6½—6-3, Straight, with ring..$26.00
6½—6-2, Straight, with ring..$27.00
6½—8-2, Straight, with ring..$30.00
6½—10-2, Str'ght, with ring..$35.00
NOTE.—Add 2c per pair for Hooks Twist Traces: add per pair for Nos. 2 and 3, 2c; No. 1, 3c; No. 0, 4c to price of Straight Link.
Eastern Standard Traces, Wagon Chain, &c..... 70%

Miscellaneous—

Jack Chain, list July 10, '93:
Iron..... 60&10&5@60&10&10%
Brass..... 65%
Safety and Plumbers' Chain.. 75%
Gal. Pump Chain.... lb., 4½@5%
Bridgeport Chain Co.:
Triumph Halter and Coil..35&2½@40%
Triumph Dog..... 50&10@60%
Brown Halter and Coil....45@50&5%
Covert Mfg. Co.:
Breast, Halter, Heel, Rein, Stallion 40%
Oneida Community:
American Halter, Dog and Kennel Chains ..... 35&2½@40%
Niagara Dog Leads and Kennel Chains ..... 45@50&5%
Wire Goods Co.:
Dog Chain..... 70%
Universal Dbl.-Jointed Chain.... 70%

Chain and Ribbon, Sash—

Oneida Community:
Steel Chain..... 60%
Pullman:
Bronze Chain, 60%; Steel Chain, Copered ..... 60&10%
Sash Chain Attachments, per set..8¢
Aluminoy Sash Ribbon, per 100 ft. ..... $2.00@$5.00
Sash Ribbon Attachments, per set..8¢

Chalk—

Carpenters' Blue..... *gro.* 50¢
Carpenters' Red..... *gro.*, 50¢
Carpenters' White..... *gro.*, 40¢

Checks, Door—

Bardsley's 45%
Pullman, per gro..... $4.00
Russwin ..... 33⅓&

Chests, Tool—

American Tool Chest Co.:
Boys' Chests, with Tools..... 55%
Youths' Chests, with Tools..... 40%
Gentlemen's Chests, with Tools..30%
Farmers', Carpenters, etc., Chests, with Tools 20%
Machinists' and Pipe Fitters' Chests, Empty..... 45%
Tool Cabinets..... 45%
C. E. Jennings & Co.'s Machinists' Tool Chests..... 7½%

Chisels—

Socket Framing and Firmer

Standard List.. 80&10@80&10&10%
Buck Bros..... 30%
C. E. Jennings & Co.:
Socket Firmer No. 10..... 25&7½%
Socket Framing No. 15..... 25&7½%
Swan's ..... 66⅔@70%
L. & I. J. White & Co..... 30@30&5%

Tanged—

Tanged Firmers..... 30&5@35%
Buck Bros..... 30%
C. E. Jennings & Co. Nos. 191, 181..25%
L. & I. J. White Co..... 25&5%

Cold—

lb.
Cold Chisels, good quality.. 13@15¢
Cold Chisels, fair quality.. 11@12¢
Cold Chisels, ordinary.... 9@10¢
Elmore Tool Mfg. Co.:
Cold Chisels..... 50&5%

Chucks—

Almond Drill Chucks..... 35%
Almond Turret Six-Tool Chuck..... 40%
Beach Pat. each $8.00..... 35&5%
Empire 25%
Blacksmiths' 25%
Jacobs' Drill Chucks..... 35%
Pratt's Positive Drive..... 25%
Skinner Lathe Chucks:
Independent 35%
Universal, Reversible Jaws..... 35%
Universal, Com. Style Jaws..... 40%
Combination, Reversible Jaws.... 35%
Combination, Com. Style Jaws...40%
Round Body or Box Body, 2 Chuck Jaws 25%
Geared Scroll Chucks..... 25%
Drill Chucks:
New Model, 25%; Geared Pattern, 25%; Skinner Patent, ...25%
Positive Drive..... 40%
Planer Chucks..... 30%
Standard 45%
Drill Press Vises..... 30%
Face Plate Jaws..... 35%
Standard Tool Co.:
Improved Drill Chuck..... 45%
Union Mfg. Co.:
Combination, Nos. 1, 2, 3, 4, 5, 6, 7, 8 and 17, 40%; No. 21..... 35%
Scroll Combinations, Nos. 83 and 84 ..... 30%
Geared Scroll, Nos. 33, 34 and 35..25%
Independent Iron, Nos. 18 and 318.35%
Independent Steel, No. 64..... 25%
Union Drill, Nos. 000, 00, 100, 101, 102, 103, 104..... 35%
Union Czar Drill..... 25%
Universal, 11, 12, 16, 17, 13, 14, 15..40%
Universal No. 42..... 35%
Iron Face Plate Jaws, Nos. 28, 30, 48 and 50..... 35%
Steel Face Plate Jaws, Nos. 70 and 72 ..... 30%
Westcott Patent Chucks:
Lathe Chucks..... 50%
Little Giant Auxiliary Drill..... 50%
Little Giant Double Grip Drill...50%
Little Giant Drill, Improved..... 50%
Oneida Drill..... 50%
Scroll Combination Lathe..... 50%
Whitaker Mfg. Co.:
National Drill..... 25%

Clamps—

Carriage Makers', Star, P., S. & W. Co. 50%
Besly, Parallel..... 33⅓&10%
Hammer & Co.:
Adjustable ..... 20&5%
Carriage Makers' H, P. Screw.40&5%
Myers' Hay Rack..... 50%
Lineman's Swedish Neverturn..... 65%
Saw Clamps, see Vises, Saw Filers'

Cleaners, Drain,

Iwan's Champion, Adjustable..... 50%
Iwan's Champion, Stationary..... 40%

Sidewalk—

American Fork & Hoe Co.:
Star, ℔ doz., Socket, $4.00: Shank $3.50
Shank, ℔ doz., X 7½, $3.50; Shank, X 8..... $3.75

Cleavers, Butchers'—

Foster Bros..... 30%
Fayette R. Plumb..... 30%
L. & I. J. White Co..... 30%

Clippers, Horse and Sheep—

Chicago Flexible Shaft Co.:
1902 Chicago Horse, each..$10.75
20th Century Horse, each...$5.00
Lightning Belt Horse, each.$15.00
Chicago Belt Horse, each..$20.00
Stewart's Enclosed Gear Ball Bearing Horse, each.....$7.50
Stewart's New Model Sheep Shearing Machine, each.$12.75
Stewart Enclosed Gear Shearing Machine, No. 9, each..$9.75
} 25%

Clips, Axle—

Regular Styles, list July 1, '05, 80&80&10%

Cloth and Netting, wire

—See *Wire, &c.*

Cocks, Brass—

Hardware list:
Plain Bibbs, Globe, Kerosene, Racking, Liquor, Bottling, &c 75%
Compression Bibbs..... 70%

Coffee Mills—

See *Mills, Coffee.*

Collars, Dog—

Nickel Chain, Walter B. Stevens & Son's list..... 40%
Leather, Walter B. Stevens & Son's list 40%

Compasses, Dividers, &c.

Ordinary Goods..... 75@75&7½%

Conductor Pipe,—

L. C. L. to Dealers:

Gal. Steel.	*Charcoal.*	*Copper.*
Northeastern:		
70&10@—%	50&10&7½%	50&10%
Eastern:		
75@—%	50&10&7½%	50&10%
Central:		
75@—%	60%	50&10%
Northwestern:		
75@—%	60%	50&10%
Western:		
70&10@—%	50&12½%	50&5%
Tennessee:		
70&10@—%	50&12½%	50&10%
Southern:		
70&10@—%	50&12½%	50&5%
Southwestern:		
70@—%	50&5%	50&5%

Terms, 60 days: 2% cash 10 days. Factory shipments generally delivered.
See also Eave Troughs.

Coolers, Water—

L. & G. Mfg. Co.:

Gal.	2	3	4	6	8
Galvanized,ea.	$1.85	$2.00	$2.25	$2.90	$3.90
Galvanized, Lined, side handles,					
Gal.	2	3	4	6	8
Each	$1.95	$2.15	$2.40	$3.30	$4.15
White Enameled					10%
Agate Lined					10%

Coppers' Tools—

See *Tools, Coopers'.*

Coppers, Soldering—

Soldering Coppers, 3 lb. to pair and heavier, 21½¢; lighter than 3 lb. to pair..... 23½¢

Cord— Sash—

Braided, Drab..... *lb.* 35¢
Braided, White, Com., Nos. 8 to 12, 22¢; No. 7, 22½¢; No. 6, 23½¢. In lots of 12 doz. or over, 1 cent less per pound.
Cable Laid Italian, lb., No. 18. 37¢
Italian, lb., A, No. 18, 25¢; B, 22¢
Common India..... *lb.*, 11@11½¢
Cotton Sash Cord, Tw'ted. 18@20¢
Patent Russia..... *lb.*... 20¢
Cable Laid Russia..... *lb*... 21¢
India Hemp, Br'd'd..... *lb*... 21¢
India Hemp, Twisted... *lb.* 13@14¢
Patent India, Twisted..lb... 17¢
Pearl Braided, cotton, No. 6, ℔ lb, 20½¢; No. 7, 19½¢; Nos. 8 to 12, 19½¢, in 12 doz. to 100 doz. lots.
Eddystone, Braided, Nos. 8 to 12, 26¢; 7, 26½; 6, 27½¢.
Harmony Cable Laid Italian, Nos. 7 to10..... ℔ lb 23¢
Pullman:
Wire Sash Cord..... 10%
Sash Cord Attachments, per 100..$2.00
Samson, Nos. 8 to 12:
Braided, ℔ lb., Drab Cotton, 55¢; Italian Hemp, 40¢@50¢; Linen, 65¢; White Cotton, 50¢; Spot Cord.....50¢
Massachusetts, White...℔ lb 40¢
Massachusetts, Drab...℔ lb 45¢
Phoenix, White, Nos 8 to 12....27¢
} 15%
Silver Lake, per lb.:
A, Drab, 45¢; A, White, 40¢; B, Drab, 40¢; B, White, 35¢; Italian Hemp, 40¢; Linen....37½¢
See also Chain and Ribbon.

Wire, Picture—

Full Length..... 90@—%
Short Length..... 90&20@—%
Hendryx Standard Wire Picture Cord. old list, 90&10%
Turner & Stanton Co. Wire Picture Cord 50%

Cradles—

Grain 50%

Crayons—

White Round Crayons, Cases. 100 gro., $8.00, $8.50, $9.00 and $10.00 according to grade.
Zelnicker's Lumber: ℔ gro.
White and Purple, Indelible....$7.50
Blue, Red, Green, Yellow and Terra Cotta, $6.50; Black.....$4.50
Giant Lumber, 5¼ in. x 15-16 in. round, all colors, $12.00; Indelibles, $14.00; Blacks.....$10.00
Genuine Soapstone, Metal Workers', 5 in. x ¼ in. Round, $2.50; 5 in. x ¾ in. Square, $1.75; 5 x ½ x 3-16, $2.50; 5 x 1¼ x 3-16.....$3.00
Suremark, Black, $2.25; Blue, Red and Yellow.....$2.50

Crooks, Shepperds'—

American Fork & Hoe Co.:
Montana ..... ℔ doz. $1.50

Crow Bars—See *Bars, Crow.*

Cultivators—

American Fork & Hoe Co.:
Victor Garden..... 50&10%

Cutlery, Table—

International Silver Company:
No. 12 M'd'm Knives, 1847, ℔ doz. $3.50
Star, Eagle, Rogers & Hamilton and Anchor..... ℔ doz. $3.00
Wm. Rogers & Son..... ℔ doz. $2.50

Cutters— Glass—

H. H. Mayhew Co..... 40%
Red Devil..... 60%
B. Mfg. Co..... 40%
Woodward 50%

Meat and Food—

American 30%

Nos.	401	402	403	404	405	406	407
Each	$5	$7	$10	$12	$25	$50	$60

Enterprise:

Nos.	5	10	12	22	32	
Each	$2	$3	$2.75	$4.50	$6	25@25&7½%

No. 222, $1.50..... 40&7½%
P., S. & W. Co.:
Ideal ..... 40@40&5%
Hales ..... 60&5%
Little Giant..... ℔ doz. 40@50%

Nos.	305	310	312	320	322
	$35.00	$48.00	$44.00	$72.00	$68.00

New Triumph No. 605, ℔ doz. $24.00. 40%

Russwin Food, No. 1, $24.00; No. 2, $27.00; 3, $42.00..... 45&10&10%
Enterprise Beef Shavers..... $15.00 25@30%

Slaw and Kraut—

Henry Disston & Sons:
Slaw and Kraut Cutters..... 35%
Corn Graters..... 30%
J. M. Mast Mfg. Co.:
Slaw Cutters, 1 Knife....℔ doz. $3.00
Combined Slaw Cutter and Corn Grater ..... ℔ doz. $4.00

Tobacco—

All Iron, Cheap...doz, $4.25@4.50
Enterprise ..... 25@30%
National, ℔ doz., No. 1, $21; No. 2, $18 ..... 40%

Diggers, Post Hole, &c—

Disston's:
Rapid, ℔ doz., $24.00..... 25%
Samson, ℔ doz., $34.00..... 25%
Iwan's Pat. Post Hole and Well Auger 40%
Vaughan Pattern Post Hole Augers, ℔ doz., $7.00
Perfection Post Hole Diggers, ℔ doz. $8.50
Split Handle Post Hole Diggers, ℔ doz., $7.50
Hercules Pattern, ℔ doz..... $9.50
Kohler's, ℔ doz., Universal, $14.00; Little Giant, $12.00; Hercules, $10.00; Invincible, $9.00; Rival, $8.50; Pioneer..... $7.50
Never-Break Crucible Steel Post Hole Diggers 60%

Dividers—See *Compasses.*

Drawing Knives—

See *Knives, Drawing.*

Dressers Emery Wheel—

Sterling Emery Wheel Dressers..... 35%
Sterling Wheel Dresser Cutters..... 35%

Drills and Drill Stocks—

Blacksmith's Common Drilling Machines..... $1.50@1.75
Breast, Millers Falls..... 15&10%
Breast, P., S. & W..... 33⅓%
C. & C. Ratchet..... 25%
Reversible Ratchet Die Stocks..... 35%
Goodell Automatic Drills.50&10@60&10%
Millers Falls Automatic Drills, Graves', per doz., Nos. 1, $4.86; 2, $8.16.
Millers Falls Automatic Drills, 33⅓&10%
Ratchet, Curtis & Curtis..... 25%
Ratchet, Parker's..... 40%
Ratchet, Weston's..... 40%
Ratchet, Weston's, Style H Improved ..... 40@40&5%
Ratchet, No. 012..... 40@40&5%
Ratchet, Celebrated..... 40@40&5%
Ratchet, Whitney's, P., S. & W. ..... 40&10@50%
Whitney's Adjustable, No. 19, $12.00, 33⅓%

Twist Drills—

Bit Stock..... 70@70&10%
Taper and Straight Shank. 65@65&10%

Drivers, Screw—

Screw Driver Bits, per doz. 45@50¢
Balsey's Screw Holder and Driver, ℔ doz., 2½-in., $6; 4-in., $7.50; 6-in., ℔ 50%
Buck Bros.' Screw Driver Bits..... 30%
Champion 50%
Disston's 70%
Elmore Tool Mfg. Co.:
Elmore 60%
Hartford 66⅔%
Indestructible ..... 55&7%
Standard Neverturn..... 66⅔%
Star ..... 75&5%
Screw Driver Bits..... 25%
Fray's Hol. H'dle Sets, No. 3, $12..50%
Ford's Brace Screw Drivers....40&10%
Gay's Double Action Ratchet..... 35%
Goodell's Auto..... 65@65&10%
Mayhew's Black Handle..... 40%
Mayhew's Monarch..... 40%
Millers Falls, ℔ doz., Nos. 11, $9.95; 12, $13.73; 20, $8.17; 21, $8.46; 41, $13.43; 42, $17.21.
Swan's:
Nos. 7565 to 7568, 60%; No. 7540, 40&10%

Eave Trough, Galvanized—

Territory.	*Gal. Steel.*	*Copper.*
Northeastern..	75&10&5%	50&10%
Eastern.....	80%	50&10%
Central.....	80&10&5%	50&10%
Northwestern..	80&10&5%	50&10%
Western.....	80&5%	50&5%
Tennessee.....	80&5%	50&10%
Southern.....	75&10%	50&5%
Southwestern..	75&10&2½%	50&5%

Terms,—2% for cash. Factory shipments generally delivered.
Note.—Lower prices are quite general owing to market irregularities.
See also Conductor Pipe and Elbows.

Elbows and Shoes—

Factory shipments, all territories:

	Galv. Steel, Galv. C. I. and Copper.
Sizes 2, 3, 4.....	80%
Sizes 1½, 2½, 3½, 5, 6...	60&10%
No. 26.....	50%
No. 24.....	25%
Copper Elbows.....	50%

Elbows, Stove Pipe—

Edwards, Standard Blue....40&10&10%
Edwards, Royal Blue.....40&10&10%
Reeves, Dover, Flat Crimp..40&10&5%

Emery, Turkish—

	¼ to ½:	5½ to 220:	Flour.
Kegs..... *lb.*	5 ¢	5½¢	3½¢
½ Kegs..... *lb.*	5½¢	5¾¢	3¾¢
¼ Kegs..... *lb.*	5½¢	6 ¢	4 ¢

10-lb. cans, 10 in case....6½¢ 7¢ 6¢
10-lb. cans, less than 10.....10¢ 10¢ 8¢
Less quantity..10¢ 10¢ 8¢

NOTE.—In lots 1 to 3 tons a discount of 10% is given.

Extensions, Bit—
Ford's Auger Bit Extensions....40&5%

Extractors, emon Juice—
—See *Squeezers, Lemon.*

Fasteners, Blind—
Zimmerman's Jap'd and Galv., 50 & 5%; Bronze and Plated.....50%
Walling's 50%
Upson's Patent.....40%

Cord and Weight—
Ives, ℔ gro., $1.08.....10%
Titan, ℔ gro., $0.66.....10%

Corrugated—
Acme Corrugated Fasteners.....70%

Faucets—
Cork Lined.....50&10@60%
Metallic Key, Leather Lined, .. 60&10@70%
Red Cedar.....40&5@40&10&5%
Petroleum .....70&10@75%
B. & L. B. Co.:
Metal Key.....60&10%
Star 60%
West Lock.....50&10%
John Sommer's Peerless Tin Key....40%
John Sommer's Boss Tin Key.....50%
John Sommer's Victor Mtl. Key.50&10%
John Sommer's Duplex Metal Key..60%
John Sommer's Diamond Lock.....40%
John Sommer's I.X.L. Cork Lined..50%
John Sommer's Reliable Cork Lined.. 50&10%
John Sommer's Chicago Cork Lined.60%
John Sommer's O. K. Cork Lined...50%
John Sommer's No Brand, Cedar....50%
John Sommer's Perfection, Cedar....40%
Self Measuring:
Enterprise, Self Measuring and Pump, ℔ doz., $36.00.....40&10%
Lane's, ℔ doz., $36.00.....40&10%
National Measuring, ℔ doz. $36.40&10%

Felloe Plates—
See *Plates, Felloe.*

Files— Domestic—
List Nov. 1, 1899.
Best Brands.....70&10@75&10%
Standard Brands.....75&10@80%
Lower Grade....75&10&10@80&10%
Gold Medal.....70%
McCaffrey's American Standard, 60&10&10%

Imported—
Stubs' Tapers, Stubs' list, July 24, '07.....33⅓@40%

Fixtures, Fire Door—
Richards Mfg. Co.:
Universal, No. 103; Special, No. 104 .....$3.75
Fusible Links, No. 96.....50%
Expansion Bolts, No. 107.....60&10%

Grindstone—
Net Prices:

Inch	*.15*	*.17*	*.19*	*.21*
Per doz.	*$3.60*	*3.85*	*4.15*	*4.65*

Peck, Stow & Wilcox Co.:

In.	15	17	19	21	24
	$4.00	4.40	4.75	5.50	6.50

....30%
Reading Hardware Co.....60%

Fodder Squeezers—
See *Compressors.*

Forks—
American Fork & Hoe Co.:
Iowa Dig-Ezy Potato.....70&5%
Hay, Regular, 3-tine....45&20&12½%
Hay, Regular, 4-tine.....60&7½&5%
Champion, Hay.....60&12½%
Acme, Hay.....60&20%
Manure, Regular, 4-tine.....65&5%
Manure, Regular, 5 and 6 tine...70%
Champion, Manure.....65&5%
Columbia, Manure.....70%
Acme, 4-tine.....60&10&5%
Round Shoulder Header, 4-tine...65%
Champion, Header.....65%
Dakota, Header.....65%
Kansas Header.....65%
Wood, Barley.....35&5%
Steel, Barley.....66⅔%
Columbia, Spading.....70&7½&5%

Frames— Wood Saw—
White, S'g't Bar, per doz. 75@80¢
Red, S'g't Bar, per doz. $1.00@1.35
Red, Dbl. Brace, per doz. $1.40@1.80

Freezers, Ice Cream—

Qt.....	*1*	*2*	*3*	*4*	*6*
Each....	*$1.25*	*$1.60*	*$1.90*	*$2.20*	*$2.80*

Fruit and Jelly Presses—
See *Presses, Fruit and Jelly.*

Fry Pans—See *Pans, Fry.*

Fuse— *Per 1000 Feet.*
Hemp $2.75
Cotton 3.20
Waterproof Sgl. Taped..3.65
Waterproof Dbl. Taped..4.40
Waterproof Tpl. Taped..5.15
10&2½%

Gates, Molasses and Oil—
Stebbins' Pattern.....80@80&5%

Gauges—
Marking, Mortise, &c..50@50&10%
Chapin-Stephens Co.:
Marking, Mortise, &c.....50&50&10%
Disston's Marking, Mortise, &c..67½%
Wire, Brown & Sharpe's.....33⅓%
Wire, Morse's.....25%
Wire, P., S. & W. Co.....33⅓%

Gimlets— Single Cut—
Numbered assortments, per gro.
Nail, Metal, No. 1, $2.00; 2, $2.30
Spike, Metal, No. 1, $1.00; 2, $1.30
Nail, Wood Handled, No. 1, $2.30; 2, $2.60
Spike, Wood Handled, No. 1, $1.30; 2, $1.60

Glass, American Window
See *Trade Report.*

Glasses, Level—
Chapin-Stephens Co.....65@65&10%

Glue, Liquid Fish—
Bottles or Cans, with Brush, 25&10@50%
Elwell's 40%

Grease, Axle—
Common Grade...gro. $6.00@$6.50
Dixon's Everlasting, 10-lb. pails, ea. 85¢; in boxes, ℔ doz., 1 lb, $1.20; 2 lb.....$2.00
Helmet Hard Oil.....25%

Griddles, Soapstone—
Pike Mfg. Co.....33⅓@33⅓&10%

Grinders—
Pike Mfg. Co.:
Hand and Foot Power, Pyko Nos. 1, 2, 3; Pyko Primo; Pyko Peerless; Pyko Spiral (foot power).33⅓%
Mower Knife and Tool, $5.00..40&10%
Royal Mfg. Co.:
Alundum Grinding Machines, each, Nos. 01, $1.75; 1A, $2.50; 10, $5.00 .....30%
Alundum Sickle Grinders, each, Nos. 20, $5.00; 20A, $6.00; 20A Combined, $6.50.....30%
Alundum Disc Grinders, each, $2.50 .....30%

Grindstones—
Pike Mfg. Co.:
Improved Family Grindstones, ℔ inch, ℔ doz., $2.00.....33⅓%
Richards Mfg. Co., Eli and Cycle, Ball Bearing, mounted.....40%

Grips, Nipple—
Perfect Nipple Grips.....40&10&2%

Halters and Ties—
Cow Ties.....70%
Bridgeport Chain Co.:
Triumph Coil and Halters.35&2½@40%
Brown Coil and Halters...45@50&5%
Brown Cow Ties.....50&5@50&10&5%
Brown Tie Outs.....70&10@75&5%
Covert Mfg. Co.:
Web .....30&2%
Jute Rope.....35%
Sisal Rope.....20%
Cotton Rope.....45%
Hemp Rope.....45%
Oneida Community:
Am. Coil and Halters.....40@40&5%
Am. Cow Ties.....45@50%
Niagara Coil and Halters...45@50&5%
Niagara Cow Ties.....45&5@50&10&5%

Hammers—
Handled Hammers—
Heller's Machinists'....55&10@55&10&5%
Heller's Farriers.....40&5@40&10&5%
Peck, Stow & Wilcox Co.:
Crucible Steel.....40&10@50%
Farriers' .....40&10@50%
Riveting .....40&10@50%
Machinists' .....66⅔@5%
Blacksmiths' 50%
Elmore Shoemakers' Hammers.....75%
Fayette R. Plumb:
A. E. Nail.....40&2½@40&12½%
Eng. and B. S. Hand.50&10&5@60&5%
Machinists' Hammers.....60&10&5%
Rivet and Tinners'.40&7½@40&12½&5%
Victor Magnetic Tack, ℔ gro....$7.75

Heavy Hammers and Sledges—
Under 3 lb., per lb., 50¢...80&10%
3 to 5 lb., per lb., 40¢...80&10&10%
Over 5 lb., per lb., 30¢.....
Over 5 lb., per lb., 30¢.80&10&10%

Handles—
Agricultural Tool Handles
Axe, Pick, &c....60&10@60&10&5%
Hoe, Rake, &c.....40%
Fork, Shovel, Spade, &c.:
Long Handles.....40%
D Handles.....40%

Cross-Cut Saw Handles—
Atkins' 40%
Champion 50%
Disston's 50%

Mechanics' Tool Handles—
Auger, assorted...gro. $1.00@$3.50
Brad Awl.....gro. $1.65@$1.75
Chisel Handles, Ass'd, per gro.:
Tanged Firmer, Apple, $2.40@ $2.65; Hickory.....$2.15@2.40
Socket Firming, Apple, $1.75@ $1.95; Hickory.....1.60@1.75
Socket Framing, Hickory, $1.60@$1.75
File, assorted.....gro. $1.30@$1.40
Hammer, Hatchet, &c. 60&10@60&10&5%
Hand Saw, Varnished, doz., 80¢ 85¢; Not Varnished.....65@75¢
Plane Handles:
Jack, doz., 30¢; Fore, doz...45¢
Chapin-Stephens Co.:
Carving Tool.....30@30&10%
Chisel .....60@60&10%
File and Awl.....60@60&10%
Saw and Plane.....30@30&10%
Screw Driver.....30@30&10%
Millers Falls Adj. and Ratchet Auger Handles .....15&10%
Nicholson Simplicity File Handle.... ℔ gro. $0.85@$1.50
J. L. Osgood:
Indestructible File and Tool, ℔ gro., No. 1, $8.00; No. 2, $8.50; No. 3, $9.00; No. 4, $9.50; No. 5, $10.00.....gro. lots 10%
W. A. Zelnicker Supply Co.:
Hammer, ℔ doz., 12 in., $2.00; 14 in., $2.00; 16 in., $2.30; 18 12., $2.50; 20 in., $2.70; 22 in., $3.00; 24 in., $3.30; 26 in., $3.50; 30 in., $3.80.
Sledge, ℔ doz., oval, 30 in., $3.80; octagon, 30 in., $3.80; oval, 36 in., $4.00; octagon, 36 in., $4.00.
Axe, ℔ doz., 28 to 34 in., $5.60; 36 in., $5.80.
Adze, ℔ doz., 36 in., $5.80; 36 in., $7.80.
Pick, ℔ doz., R. R., 36 in., $8.00; coal, 34 in., $5.80.
Hatchet, ℔ doz., 12 to 14 in., $2.00.
50%

Hangers—
NOTE.—Barn Door Hangers are generally quoted per pair, without track and Parlor Door Hangers per double set with track, &c.
Chicago Spring Butt Co.:
Friction 25%
Oscillating 25%
Big Twin.....25%
Chisholm & Moore Mfg. Co.:
Baggage Car Door.....50%
Elevator 30%
Railroad 50%
Cronk & Carrier Mfg. Co.:
Loose Axle.....60&10%
Roller Bearing.....70%
Griffin Mfg. Co.:
Solid Axle, No. 10, $12.00..60&10%
Roller Bearing, No. 11, $15.00, 60&10%
Roller Bearing, Ex. Hy., No. 22, $18.00.....60&10%
Bull Dog, $24.00.....70%
Lane Bros. Co.:
Parlor, Ball Bearing, $4.00: Standard, $3.15; No. 105, $2.85; New Model, $2.80; New Champion per set of 4 Hangers, complete with track.....$2.25
Barn Door, Standard.....60&10%
Hinged .....net $6.08
Covered .....60&5%
Special .....70&5%
Trolley Hangers and track...50%
Lawrence Bros.:
Cleveland .....70&7½%
Clipper, No. 75.....60%
Crown .....55&10%
Cyclone, No. 40.....net $6.50
Tandem, No. 50.....net $7.50
New York.....55&10%
Trolley, No. 30, ℔ pair.....$1.25
McKinney Mfg. Co.:
Roller Bearing, Nos. 1 and 2, 70%
Anti-Friction 60%
Hinged Hangers, King Charm.60%
Richards Mfg. Co.:
Hangers, Nos. 47, 48, 147, 247, 60&5%
Pioneer Wood Track, No. 3..$2.25
Roller B'r'g St'l Track No. 12.$2.20
Roller B'r'g St'l Track No. 13,$2.50
Roller B'r'g, Nos. 39, 41, 43, 70&7½%
Hero, Adj. Track No. 19..50&10%
Adjustable Track Tandem Trolley Track No. 16.....50&10%
Seal, Steel Track No. 8.....$2.25
Auto Adj. Track No. 22..50&5%
Trolley B. D. No. 17, $1.25; F. D. No. 120, $2.25; No. 121, $2.45; No. 150.....$2.50
Safety Underwriters F. D. No. 101 .....50%
Tandem No. 44..2¼ and 3 60&10%
Palace, Adjustable Track No. 132 .....50&5%
Royal, Adjustable Track No. 122 .....50&10%
Ives' Wood Track No. 1.....$2.25
Trolley B. D. No. 20.....50&10%
Trolley B. D. No. 24, $1.30; No. 27, $1.40; No. 28.....$1.60
Roller Bearings, Nos. 37, 38, 39, 41, 43, 44, Sizes 1 and 2.70&7½%
Anti-friction, No. 42; No. 44, sizes 2½ and 3.....60%
Hinged Tandem No. 48....60&5%
Folding Door B. B, Swivel No. 135 .....40%
Taylor & Boggis F'y Co.'s Kidder's Roller Bearing, ℔ doz. 4 in., $12.00; 5 in., $14.00..40&10%
Myers' Stayon Hangers.....60%
Extra 5&10% often given.

Hangers— Garment—
Pullman Trouser, ℔ gro. No. 1 $9.00; No. 4, $24.00; No. 5, $16.50; No. 8, Black Enamel, $7.50; No. 10, $21.00; No. 12, $8.00; No. 15, Rods, $9.00; No. 18, Loops.....$10.00
Victor Folding.....℔ gro. $9.60

Gate—
Myers' Patent Gate Hangers, ℔ doz. net 50%

Joist and Timber—
Lane Bros. Co.....35%

Hasps—
Griffin's Security Hasp.....50&10%
McKinney's Perfect Hasp, ℔ doz..60%

Hatchets—
Regular list, first qual.50@50&10%
Second quality.....50&10@60%

Heaters, Carriage—
Clark, No. 5, $1.25; No. 5B, $1.50; No. 3, $1.75; No. 3D, $2.00; No. 7D, $2.25; No. 3E, $2.50; No. 1, $3.00.....25%
Clark Coal, ℔ doz., $0.75.....20%

Hinges—
Blind and Shutter Hinges
Surface Gravity Locking Blind: Doz. Sets with Fastenings, No. 1, $0.70; No. 3, $1.25; No. 5, $2.65.
Mortise Shutter.....80%
Mortise Reversible Shutter...80%
North's Automatic Blind Fixtures, No. 2, for Wood, $9.00; No. 3, for Brick, $11.50.....10%
Charles Parker Co.....70@75%
Parker Wire Goods Co.
Hale & Benjamin Automatic Blind Hinges 20%
Hale's Blind Awning Hinges, No. 110, for wood, $9.00; No. 111, for brick, $9.00.....20%
Reading's Gravity.....60%
Stanley's Steel Gravity Blind Hinges, No. 164½, ℔ doz. sets, without screws, $0.95; with screws, $1.25.
Wrightsville Hardware Co.:
O. S., Lull & Porter.....75&5%
Acme, Lull & Porter.....75%
Queen City Reversible.....75%
Shepard's Noiseless, Nos. 60, 65, 55 .....75&5%
Niagara, Gravity Locking, Nos. 1, 3 & 5.....75&5%
Clark's O. P., No. 1.....75&10%
Clark's O. P., Nos. 3 and 5....75&5%
Tip Pat'n, No. 1.....75&10%
Clark's No. 3.....75&5%
Buffalo Gravity Locking, Nos. 1, 3 & 5.....70&10&5%
Shepard's Double Locking.....75%
Champion Gravity Locking.....75&5%
Pioneer .....75&10%
Empire 65%
W. H. Co.'s Mortise Gravity Locking, No. 2.....60&10%

Gate Hinges—
Clark's or Shepard's—Doz. sets:

No.	*1*	*2*	*3*
Hinges with L't'chs.	*$2.00*	*2.70*	*5.00*
Hinges only.....	*1.25*	*1.90*	*3.50*
Latches only.....	*.70*	*.75*	*.35*

New England:
With Latch.....doz..@$2.00
Without Latch.....doz..@$1.60
Reversible Self-Closing:
With Latch.....doz..@$1.75
Without Latch...doz....@$1.35
Western:
With Latch.....doz. $1.75
Without Latch.....doz..$1.15
Wrightsville Hardware Co.:
Shepard's or Clark's Hinges and Latches, Hinges only or Latches only, Nos. 1, 2 or 3.....70%

Miscellaneous—
Griffin Mfg. Co., Fleur de Lis Surface Hinges, ℔ doz. prs.....$1.00

Pivot Hinges—
Bommer Bros. Pivot, Ball Bearing 40%
Lawson Mfg. Co. Matchless.....30%

Spring Hinges—
Holdback, Cast Iron...$6.75@$7.00
Non-Holdback, C'st Iron $6.50@$6.75
J. Bardsley:
Bardsley's Non-Checking Mortise Floor Hinges.....40%
Bardsley's Patent Checking.33⅓%
Bommer Bros.:
Spring Butt Hinges.....40%
Surface Floor, Ball Bearing 40%
Mortise Floor, Ball Bearing.40%
Lavatory Hinges.....40%
Non-Holdback Screen Door, Nos. 2000 and 900.....40%
Holdback Screen Door, No. 999.....℔ gro, $9.00
Chicago Spring Butt Co.:
Chicago Spring Hinges.....25%
Triple End Spring Hinges....50%
Chicago (Ball Bearing) Floor.50%
Garden City Engine House...25%
Keene's Saloon Door.....25%
Columbian Hardware Co.:
Acme, Wrought Steel.....30%
Acme, Brass.....25%
American 30%
Columbia, ℔ gr., No. 14, $9.00; No. 18.....$25.00
Columbia, Adj., No. 7, ℔ gr.$12.00
Gem, new list.....30%
Clover Leaf and Acorn, per gro. $12.00
Oxford, new list.....30%
Floor Spring Hinges.....65&10%
Columbian Steel.....65&10%
Lawson Mfg. Co.:
Matchless Spring Hinges.....30%
Matchless Jamb Hinges.....33⅓%
Richards Mfg. Co.:
Superior Double Acting Floor Hinges 40%
Shelby Spring Hinge Co.:
Buckeye All Steel Holdback Screen Door.....℔ gr. $9.00
Chief Ball Bearings Floor Hinge 50%
Ball Bearing Door.....25%
No. 777, Sheet Steel Holdb'k. ℔ gr. pr.....$9.00
Standard Mfg. Co.:
Champion Double Acting Door Hinge .....25&10&10%
Standard Double Acting Floor Hinge .....25&10&10%
Superior Spring Hinge Co.:
Superior Floor Hinges.....40%
Spring Hinges.....40%
Extra 10% often given on most of these Hinges

Wrought Iron Hinges—
Strap and T Hinges, &c., list February 10, 1908:
Light Strap Hinges..50&10%
Heavy Strap Hinges..60&65%
Light T Hinges.....50%
Heavy T Hinges.....40%
Extra Hvy. T Hinges.50&10%
Hinge Hasps.....33⅓%
Cor. Heavy Strap....60&65%
Cor. Ex. Heavy T...50&10%
Extra 10&7½%

Screw Hook and Strap. { *6 to 12 in..lb. 3½¢* / *13 to 20 in..lb. 3¼¢* / *22 to 53 in..lb. 3¢* }

Screw Hook and Eye:
¾ to 1 inch.....lb. 6½¢
⅝-inch .....lb. 7½¢
½-inch .....lb. 8½¢

Hitchers, Stall—
Covert Mfg. Co., Stall Hitchers..30&2%

Hods— Coal—
M'f'gr's list, price per gross:

Inch	*15*	*16*	*17*	*18*
Galv. Open	*$35*	*$39*	*$42*	*$46*
Jap. Open	*26*	*28*	*31*	*35*
Galv. Funnel	*43*	*48*	*53*	*56*
Jap. Funnel	*33*	*36*	*39*	*43*

10&7½&5%

Masons' Etc.
Cleveland Wire Spring Co.:
Steel Brick, No. 102.....each $1.05
Steel Mortar, No. 158.....each $1.35

Hoes— Eye-

Scovil and Oval Pattern, 60&10@60&10&10%
Grub, list Feb. 23, 1899, 70&10@70&10&10%
D. & H. Scovil....27½%
Am. Fork & Hoe Co. (Scovil Pattern)....60&5%

Handled—

Cronk's Weeding, No. 1, $2.00; No. 2, $2.50
Star Double Bit....$2.50
American Fork & Hoe Co.:
Regular, Cotton....75&10&5&2½%
Crescent, Cultivator....75&2½%
Mattock, Senior....70%
Mattock, Junior....70%
Sprouting....50%
Tobacco, Harper's....66⅔&15&10%
Warren....55&10&10&5%
Ivanhoe....65&15&10%
Cultivator, B B 6....70&10&10&5%
Cultivator, B B 6½....70&10&10&5%
Weeding, Acme....72½&10&2½%
Scuffle, Lightning....60&5%

Hoisting Apparatus—

See *Machines, Hoisting.*

Holders— Bit—

Angular, ₱ doz. $24.00....45&10%

Door—

Bardsley's, Iron, 40%; Brass and Bronze....25%
Empire....50%
Pullman....25%
Richards Mfg. Co.: No. 117, Ever-ready, 40%; Nos. 118, 119, Sure Grip....50%
Superior....40%

File and Tool—

Nicholson File Holders and File Handles....33⅓@40%

Fruit Jar—

Triumph Fruit Jar Holder, ₱ gross, $18.00; ₱ doz....$2.00

Trace and Rein—

Fernald Double Trace Holder, ₱ doz. pairs....$1.25
Dash Rein Holder, ₱ doz....$1.25

Hones—Razor—

Pike Mfg. Co., Belgian and Swaty, 50%; German....33⅓%

Hooks—Cast Iron—

Bird Cage, Reading....40%
Clothes Line, Reading List....40%
Coat and Hat, Reading....45&20%
Coat and Hat, Wrightsville....60&5%
Harness, Reading List....40%

Wire—

Belt, Nos. 1 to 15....75&10@80%
Wire C. & H. Hooks..80@80&10%
Bradley Metal Clasp Wire, Coat and Hat, 75&10@80%; Ceiling..75&10@80%
Columbian Hdw. Co., Gem....75&10%
Parker Wire Goods Co., King..75&10%
Wire Goods Co.:
Acme, 60&10%; Chief, 70&10%; Crown, 75%; Czar, 65&10%; Brace, 75%; Czar Harness, 50%; Ceiling, 75%.

Wrought Iron—

Box, 6 in., per doz., $0.90; 8 in., $1.15.
Cotton....doz. $1.25@$1.50
Wrought Staples, Hooks, &c.—
See Wrought Goods.

Miscellaneous—

Hooks, Bench, see *Stops, Bench.*
Bush, Light, doz., $6.20; Medium, $6.75; Heavy, $7.65
Grass, boat, all sizes, per doz., $2.75@$3.00
Grass, common grades, all sizes, per doz....$1.25@$1.50
Whiffletree....lb. 5¾@6¢
Hooks and Eyes:
Brass....60@60&10%
Malleable Iron....70@70&10%
Covert Mfg. Co. Gate and Scuttle Hooks....40%
Turner & Stanton Co. Cup and Shoulder....85&10%
Bench Hooks—See Bench Stops.
Corn Hooks—See Knives, Corn.

Horse Nails—

See *Nails, Horse.*

Horseshoes—

See *Shoes, Horses.*

Hose, Rubber—

Garden Hose, ¾-inch:
Competition....ft. 6@6½¢
3-ply Guaranteed....ft. 8½@9¢
4-ply Guaranteed....ft. 9½@12¢
Cotton Garden, ¾-in., coupled:
Low Grade....ft. 8@ 9¢
Fair Quality....ft. 10@11¢

Irons— Sad—

From ¼ to 10....lb. 2½@2¾¢
B. B. Sad Irons....lb. 3½@3½¢
Mrs. Potts', cents per set:

	Nos. 50	55	60	65
Jap'd Caps	.86	93	96	98
Tin'd Caps	.91	88	1.01	98

New England Pressing..lb. 3¾@4¢

Bar and Corner—

Richards Mfg. Co., Bar, 60&10%; Corner....60%

Pinking—

Pinking Irons....doz. 60@65¢

Irons, Soldering

See *Coppers.*

Jacks, Wagons—

Covert Mfg. Co.:
Auto Screw....30&2%; Steel, 45%
Lockport....50%
Lane's Steel....30&5%
Richards' Tiger Steel, No. 130...50&10%
Smith & Hemenway Co.'s....25%

Ladder—

Richards Mfg. Co., Ladder Jacks..50%

Jointers—

Pike Mfg. Co., Saw Jointers, $7.00..40%

Kettles—

Brass, Spun, Plain....20@25%
Enameled and Cast Iron—See Ware, Hollow.

Knives—

Butcher, Kitchen, &c.—

Foster Bros.' Butcher, &c....30%
Wilkinson Shear & Cutlery Co....60%

Corn—

Columbian Cutlery Co., Wilcut Brand Knives and Hooks....60%
American Fork & Hoe Co.:
Easy Cut, ₱ doz., No. 10 C H...$2.10
Easy Cut, ₱ doz., No. 10 B C H..$2.20
Acme, ₱ doz....$2.35
Dent, ₱ doz....$2.35
Adjustable, Serrated, ₱ doz....$1.90
Serrated, ₱ doz....$1.85
Yankee, No. 1 C H....$1.35
Yankee, No. 2 C H....$1.15

Drawing—

Standard List....80&10@—%
C. E. Jennings & Co., Nos. 45, 46, 25&7½%
Jennings & Griffin, Nos. 41, 42, 66⅔&7½%
Swan's....66⅔@70%
Watrous....16⅔%
L. & I. J. White....20&5@25%

Hay and Straw—

Serrated Edge, per doz. $5.00@5.50
Iwan's Sickle Edge....₱ doz. $9.50
Iwan's Serrated....₱ doz. $10.00

Miscellaneous—

Farriers'....doz. $2.60@3.55
Wostenholm's....₱ doz. $3.00@3.25

Knobs—

Base, 2½-inch, Birch or Maple, Rubber Tip....gro. $1.25@1.40
Carriage, Jap., Drive, all sizes, gro. 35@40¢
Door, Mineral....doz. 65@70¢
Door, Por. Jap'd....doz. 70@75c
Door, Por. Nickel..doz. $2.05@2.15
Bardsley's Wood Door, Shutters, &c. 15%

Lacing, Leather—

See *Belting, Leather*

Ladders, Store, &c.—

Lane's Store....25%
Myers' Noiseless Store Ladders....50%
Richards Mfg. Co.:
Improved Noiseless, No. 112....50%
Climax Shelf, No. 115....50%
Trolley, No. 109....50%

Ladles, Melting—

L. & G. Mfg. Co., Melting and Plumbers'....25%
P., S. & W....40&10%
Reading....60%

Lamps,—

Hammer's M. I. Hand....45%

Lanterns—Tubular—

Regular, No. 0....doz. $3.50@4.00
Side Lift, No. 0....doz. $4.00@4.50
Hinge Globe, No. 0. doz. $4.00@4.50
Other Styles....40@40&10%

Bull's Eye Police—

3-inch....$3.75@4.00

Latches— Thumb—

Roggin's Latches, Jap'd, with Screws....doz. 35@40¢

Door—

Cronk & Carrier Mfg. Co., No. 101, ₱ doz. $2.00
Richards' Bull Dog, Heavy, No. 125....50&5%
Richards' Trump, No. 127....$1.50

Leaders, Cattle—

Small....doz. 50¢; large, 60¢
Covert Mfg. Co.:
Cotton, 45%; Hemp, 45%; Jute, 35%; Sisal, 20%.

Leathers, Pump—

See *Pumps—*

Lifters, Transom—

R. & E....10%

Lines—

Wire Clothes, Nos.	*18*	*19*	*20*
100 feet	*$2.30*	*1.95*	*1.75*
75 feet	*$1.95*	*1.65*	*1.50*

Samson Cordage Works:
Solid Braided Chalk, Nos. 0 to 3..40%
Solid Braided Masons'....30%
Silver Lake Braided Chalk, No. 0, $6.00; No. 1, $6.50; No. 2, $7.00; No. 3, $7.50....₱ gr. 20%
Masons' Lines, Shade Cord, &c.; White Cotton, No. 3½, $1.50; No. 4, $2.00; No. 4½, $2.50; Colors, No. 3½, $1.75; No. 4, $2.25; No. 4½, $2.75; Linen, No. 3½, $2.50; No. 4, $3.50; No. 4½, $4.50....25%
Tent and Awning Lines: No. 5, White Cotton, $7.50; Drab Cotton, $8.50....20%
Clothes Lines, White Cotton: 50 ft., $2.75; 60 ft., $3.25; 70 ft., $3.75; 75 ft., $4.00; 80 ft., $4.25; 90 ft., $4.75; 100 ft., $5.25....20%
Turner & Stanton Co.:
Solid Braided Chalk, Masons' and Awning Lines....40%
Clothes Lines, White Cotton....20%
Shade Cord, Cotton or Linen....20%

Locks— Cabinet—

Cabinet Locks....33⅓@33⅓@5%

Door Locks, Latches, &c.—

NOTE.—Net Prices are very often made on these goods.
Reading Hardware Co....40%
R. & E. Mfg. Co....15%

Padlocks—

R. & E. Mfg. Co. Wrought Steel and Brass....75&10%

Sash, &c.—

Ives' Patent:
Crescent....10%
Automatic Gravity Metal Sash, ₱ gro., $149.58....10%
Window Ventilating....10%
Pullman Patent Ventilating Lock..25%
Reading Sash Locks....40%
Taylor Mfg. Co., Perfect Ventilating, ₱ doz....$0.75@$1.00

Machines—Boring—

Com. Upr't, without Augers, $2.00@2.25
Com. Angl'r, without Augers, $2.25@2.50
Ford Auger Bit Co....$22.00
Jennings', Nos. 1 and 4....25&7½%
Millers' Falls....5.75
Snell's, Upright, $2.65; Angular, $2.90
Swan's Improved....40&10%

Corking—

Reisinger Invincible Hand Power... ₱ doz. $48.00

Fence—

Williams' Fence Machines....each, $5.50

Hoisting—

Moore's Anti-Friction Chain Hoist..30%
Moore's Hand Hoist, with Lock Brake....30%
Moore's Cyclone High Speed Chain Hoist....25%

Ice Cutting—

Chandler's....12½%

Washing

Boss Washing Machine Co.:	Per doz.
Boss No. 1	$57.00
Boss Rotary	$57.00
Champion Rotary Banner No. 1	$57.00
Standard Champion No. 1	$50.00
Standard Perfection	$27.00
Cincinnati Square Western	$33.00
Uneeda American, Round	$33.60

Mallets—

Hickory....45&5@50%
Lignumvitæ....45&5@50%
Tinners' Hickory and Applewood....doz. 45&5@50%

Mangers, Stable—

Swett Iron Works....50%

Mats, Door—

Acme Flexible Steel....50%
Elastic Steel (W. G. Co.), new list..50%

Mattocks—

See *Picks and Mattocks.*

Milk Cans—See *Cans, Milk.*

Mills, Coffee, &c.—

Enterprise Mfg. Co.:
Coffee....20@25%
Shell and Corn....25&10%
National list Jan. 1, 1902....30%
Parker's Columbia and Victoria..33⅓%
Parker's Box and Side....50&10%
Swift, Lane Bros. Co....30%

Motors, Water—

Divine's Red Devil....30%

$2.50	3.50	10.00	15.00	
No. 1.	2	3	4	33⅓%

Lippincott's:

No.	1	2	3	4
	$2.50	3.50	10.00	15.00..33⅓%

Pike Mfg. Co., Tool and Knife Grinding....33⅓%

Mowers, Lawn—

NOTE.—Net prices are generally quoted
Cheapest, 10-in., $2.00; advance 10¢ for each size.
Cheap, 10-in., $2.25; advance 15@20¢ for each size.
Better Grade, 10-in., $3.00; advance 25¢ for each size.

	12	*14*	*16*	*18-in.*
High Grade...	*$4.50*	*4.75*	*5.00*	*5.25*

Continental....60%
Great American....70%
Great American Ball B'r'g, new list..70%
Quaker City....70%
Pennsylvania....60%
Pennsylvania, Jr., Ball Bearing, 50&10&5%
Pennsylvania Golf....50%
Pennsylvania Horse....33⅓&5%
Pennsylvania Pony....40&5%

Nails—

Wire Nails and Brads, Miscellaneous....85&5@85&10%
Cut and Wire. See *Trade Report.*
Hungarian, Finishing, Upholsterers', &c. See *Tacks.*

Horse—

Nos.	6	7	8	9	10	
Anchor	23	21	20	19	18	.. ₱ lb. net, 12¢
Coleman	13	12	12	11	11	net ₱ lb
New Haven	23	21	20	19	18	.. ₱ lb. net, 12¢
Livingston	19	18	17	16	16	....10%
Western						₱ lb 8½¢

Jobbers' Special Brands, per lb. 9¢

Picture—

	1½	2	2½	3 in.
Brass Hd. gro.	*.55*	*.55*	*.60*	*.70*
Por. Head, gro.	*..*	*1.10*	*1.10*	*1.10*

Upholsters—

Brass....30%
Plated....30&10%

Nippers—

See *Pliers and Nippers.*

Nipples—

Standard Nipple Co.:
Wrought Pipe Nipples....80%

Nuts— *Blank or Tapped.*

Cold Punched: *Off list.*
Square....5.30@5.40¢
Hexagon....5.90@6.00¢
Square, C., T. & R..5.70@5.80¢
Hexagon, C., T. & R. 6.50@6.60¢
Hot Pressed: Off list.
Square....5.80¢
Hexagon....6.30¢

Oakum—

Best....lb. 6½¢
U. S. Navy....lb. 6 ¢
Navy....lb. 5 ¢
Plumbers' Spun Oakum..2¾@3 ¢

Oil—

Pike Mfg. Co., Stonoil....40%

Oil Tanks—See *Tanks, Oil.*

Oilers—

Steel, Copper Plated....75&10%
Chase or Paragon:
Brass and Copper....50&10%
Zinc....65&10@70%
Railroad....60&10&10%
Malleable, Hammers' Improved, Nos. 11, 12 and 13, 10%; Old Pattern, Nos. 1, 2, 3, 4, 50%.
American Tube & Stamping Co.:
Spring Bottom Cans....70@70&10%
Railroad Oilers, &c....60@60&10%
Maple City Mfg. Co.:
Spring Bottom Cans....70@70&10%
Railroad Oilers, &c....60@60&10%

Openers—Packing Box—

Herculever, ₱ doz., $24....

Can Openers—

Per doz.
Sprague, Iron Handle....30@45c
Sprague, Wood Handle....40¢
Sardine Scissors....$1.75@3.00
Can and Bottle Openers, ₱ doz., net: Yankee, $0.75@$0.85; Little Gem, $0.50@$0.65; Nifty....$0.75

Egg—

Hartigan Nickel Plate, ₱ doz., $2.00; Silver Plate, $4.00.

Packing—

Asbestos Packing, Wick and Rope, any quantity....18@20¢

Rubber—

(Fair quality goods.)
Sheet, C. I....11@12¢
Sheet, C. O. S....11@12¢
Sheet, C. B. S....12@13¢
Sheet, Pure Gum....40@45¢
Sheet, Red....40@50¢
Jenkins' '96, ₱ lb, 80¢....25%

Miscellaneous—

American Packing....lb. 7@10 ¢
Cotton Packing....lb. 16@25 ¢
Italian Packing....lb. 9@10¢
Jute....lb. 4½@4¾¢
Russia Packing....lb. 9@10¢

Pails, Water, Well, &c.—

See *Buckets.*

Paint—

Dixon's Silica-Graphite, in 1 gal. pails and 5 gal. kegs, 25%; packages of larger size....20%

Pans— Dripping—

Standard List....75%
Edwards, Royal Blue....75%

Fry—

Common Lipped:

Nos....	*1*	*2*	*3*	*4*	*5*
Per doz....	*$0.75*	*0.85*	*0.95*	*1.15*	*1.30*

Refrigerator, Galva.—

Inch....	*12*	*14*	*16*	*18*
Per doz....	*$1.75*	*2.25*	*2.80*	*3.15*

Paper—Building Paper

Asbestos: *lb.*
Roll Board or Building Felt, 6 to 30 lb., per 100 sq. ft...2½¢
Roll Board or Building Felt, 3-32 and ⅛ in., 45 to 60 lb., per 100 sq. ft....3½c
Mill Board, Sheet, 40 x 40 in., 1-32 to ½ in....3¢
Per roll.
Rosin Sized Sheathing: 500 sq. ft. Light weight, 25 lbs. to roll, 48@58¢
Medium weight, 30 lbs. to roll, 56@70¢
Heavy weight, 40 lbs. to roll 75@78¢
Black Water Proof Sheathing, 500 sq. ft., 1 ply, 65¢; 2 ply, 85¢; 3 ply, $1.10; 4 ply, $1.25.
Deafening Felt, 2, 6 and 4½ sq. ft. to lb., ton....$34.50
Red Rope Roofing, 250 sq. ft. per roll....$1.75

Tarred Paper—

1 ply (roll 400 sq. ft.), ton. $34.00@$38.00
2 ply, roll 108 sq. ft....65¢
3 ply, roll 108 sq. ft....88¢
Slater's Felt (roll 500 sq. ft.).80¢

Sand Paper and Cloth—

Flint and Emery....50&10%
Garnet Paper and Cloth....25%

Parers—Apple—

Goodell Co.:

Family Bay State	₱ doz. $15.00
Improved Bay State	₱ doz. $36.00
New Lightning	₱ doz. $7.00
Turn Table '98	₱ doz. $6.00
White Mountain	₱ doz. $5.00
Bonanza Improved	each $7.50
Dandy	each $10.00
Eureka Improved	each $20.00
New Century	each $20.00
Ranger	each $30.00

Livingston Nail Co.:
Daisy ..... ℔ doz. $4.00
Little Star ..... ℔ doz. $5.00
Rocking Table ..... ℔ doz. $6.20
Reading Hardware Co.:
Advance ..... ℔ doz. $4.00
Baldwin ..... ℔ doz. $4.00
Reading 72 ..... ℔ doz. $3.25
Reading 78 ..... ℔ doz. $6.25

Orange—
Goodell Co., Success ..... each $20.00

Potato—
Saratoga ..... ℔ doz. $7.00
White Mountain ..... ℔ doz. $6.00

Picks and Mattocks—
(List Jan., 1908.)
List ..... 75&10%
Cronk's Handled Garden Mattock, ℔ doz., $3.00 ..... 33⅓%

Pinking Irons—
See *Irons, Pinking.*

Pins, Escutcheon—
Brass ..... 50@50&10%
Iron, list Nov. 11, '05 ..60@60&10%

Pipe, Cast Iron Soil—
Eastern Prices:
Standard, 2-6 in ..... 68½% } Extra, 10 & 10&5%
Extra Heavy, 2-6 in ..7½% }
Fittings, Standard and Heavy 81¼%

Pipe, Merchant—
Carloads to Consumers:

	Steel. Blk.	Steel. Galv.	Iron. Blk.	Iron. Galv.
	%	%	%	%
⅛ and ¼ in.	66	50	61	..
⅜ in.	68	54	66	52
½ in.	70	58	68	56
¾ to 6 in.	74	64	72	62
7 to 12 in.	71	56	69	54

Pipe, Vitrified Sewer—
Carload lots.
Standard Pipe and Fittings, 3 to 24 in., f.o.b. factory:
First-class 87%
Second-class 90%

Pipe, Stove—

	Per 100 joints. C. L.	L. C. L.
Edwards' Nested:		
5 in., Standard Blue	$6.25	$7.25
6 in., Standard Blue	6.75	7.75
7 in., Standard Blue	7.75	8.75
5 in., Royal Blue	7.00	8.00
6 in., Royal Blue	7.50	8.50
7 in., Royal Blue	8.50	9.50
Wheeling Corrugating Co.'s Nested:		
5 in., Uniform Color	$5.90	$6.90
6 in., Uniform Color	6.40	7.40
7 in., Uniform Color	7.40	8.40

Planes and Plane Irons—
Wood Planes—
Bench, first qual ..... 30@30&10%
Bench, second qual ...40@40&10%
Molding ..... 25@25&10%
Chapin-Stephens Co.:
Bench, First Quality 30%
Bench, Second Quality 40%
Molding and Miscellaneous 25%
Toy and German 30%
Union 40%

Iron Planes—
Chaplin's Iron Planes 60%
Union 60%

Plane Irons—
Wood Bench Plane Irons, list Dec. 12, '06 ..... 25%
Buck Bros. 30%
Chapin-Stephens Co. 25%
Union 50%
L. & I. J. White ..... 20&5@25%

Planters, Corn, Hand—
Kohler's Eclipse ..... ℔ doz. $7.50

Plates—
Felloe ..... lb. 3¾@4¢
Avery Stamping Co.:
Standard Wrot. Steel Felloe Plates in 100 lb kegs, per 100 lb, ¾-in. to 1⅛-in., $4.00 net; 1¼-in. to 2-in., inclusive, $3.75 net.

Steel Pipe Hook—
Never-Break ..... 75&10%

Pliers and Nippers—
Button Pliers ....75&5@75&10&5%
Gas Burners, per doz., 5 in., $1.25 @$1.30; 6 in., $1.45, $1.50.

Gas pipe..	7	8	10	12-in.
	$2.00	$2.25	$2.75	$3.50

Acme Nippers ..... 50&5%
Cronk & Carrier Mfg. Co.:
American Button 60%
Improved Button ..... 75&10%
Cronk's 60%
No. 90 Linemen's 50%
Stub's Pattern 45%
Combination and others 33⅓%
Elmore Tool Mfg. Co.:
Gas Pliers 70%
Wire and Cutting Pliers 75%
Heller's Farriers' Nippers, Pincers and Tools ..... 40&5@10&10&5%
P., S. & W. Tinners' Cutting Nippers 40%
Swedish Side, End and Diagonal Cutting Pliers 50%
Utica Drop Forge & Tool Co.:
Pliers and Nippers, all kinds 40%

Plumbs and Levels—
Chapin-Stephens Co.:
Plumbs and Levels ..... 30@30&10%
Chapin's Imp. Brass Cor. .40@40&10%
Pocket Levels ..... 30@30&10%
Extension Sights ..... 30@30&10%
Machinists' Levels ..... 40@40&10%
Disston's Plumbs and Levels ....60&10%
Disston's Pocket Levels ..... 60&10%
Stanley's Dulex 30%
Woods' Extension 33⅓%

Points, Glaziers'—
Bulk and 1-lb. papers ....lb. 9 ¢
¼-lb. papers ..... lb. 9½¢
¼-lb. papers ..... lb. 10 ¢

Police Goods—
Manufacturers' Lists ..25@25&5%
Tower's 25%

Polish—Metal, Etc—
Ladd Co.:
Putzade Liquid, ℔ gro., ½ pts., $12.00; 1 pts., $20.00; 1 qts., $40.00; ℔ doz. ½ gals., $6.35; 1 gals., $12.00.
Prestoline Liquid, No. 1 (½ pt.), ℔ doz., $3.00; No. 2 (1 qu.), $6.00..40%
Prestoline Paste 40%
George William Hoffman:
U. S. Metal Polish Paste, 3 oz. boxes, ℔ doz. 50¢; ℔ gro, $4.50; ½ lb boxes, ℔ doz. $1.25; 1 lb boxes, ℔ doz. $2.25.
U. S. Liquid, 8 oz. cans, ℔ doz., $1.25.
Barkeepers' Friend Metal Polish, ℔ doz., $1.75.

Stove—
Black Eagle Benzine Paste, 5 lb cans, ℔ lb 10¢
Black Eagle, Liquid, ½ pt. cans.. ℔ doz. 75¢
Black Jack Paste, ¾ lb cans, ℔ gr. $9.00
Black Kid Paste, 5 lb can...each, $0.65
Ladd's Black Beauty Liquid, per 100 tins $6.75
Joseph Dixon, ℔ gr. $5.75 ..... 10%
Dixon's Plumbago ..... ℔ lb 8¢
Fireside ..... ℔ gr. $2.50
Gem, ℔ gr. $1.50 ..... 10%
Japanese ..... ℔ gr. $3.50
Jet Black ..... ℔ gr. $3.50
Peerless Iron Enamel, 10 oz. cans.. ℔ doz. $1.50

Window Polish—
Benj. P. Forbes:
Glasbright, No. 2, gal pails, ℔ doz., $24.00; each, $2.50; 1 lb cans, each ..... 75¢
Glasbright Powder, bbls., ℔ lb..20¢

Poppers, Corn—
1 qt. Square..doz.$0.80; gro.$8.75
1 qt. Round..doz.$0.90; gro.$10.00
1½ qt. Square.doz.$1.20; gro..$12.00
2 qt. Square..doz.$1.50; gro..$15.00

Post Hole and Tree Augers and Diggers—
See also *Diggers, Post Hole, &c.*

Posts, Steel—
Steel Fence Posts, each, 6 ft., 46¢; 6½ ft., 48¢; 7 ft., 50¢.
Steel Hitching Posts ..... each $1.30

Potato Parers—
See *Parers, Potato.*

Pots, Glue—
Enameled 40%
Tinned ..... 30&10%

Powder—
Black Sporting:
Kegs (25 lb.)..$5.00@5.50
Half Kegs (12½ lb.), $2.75@3.00
Quarter Kegs (6¼ lb.), $1.50@1.65
Canisters, pounds... .25
Canisters, ½ pounds. .15
Canisters, ¼ pounds. .12
} Discount to the trade, 10%.
NOTE.—Prices vary according to territory.
King's Semi-Smokeless:
Keg (25 lb bulk) $6.50
Half Keg (12½ lb bulk) $3.50
Quarter Keg (6¼ lb bulk) $1.90
Case 24 (1 lb cans bulk) $8.50
Half case (1 lb cans bulk) $4.50

King's Smokeless:	Shot Gun.	Rifle.
Keg (25 lb bulk)	$12.00	$15.00
Half Keg (12½ lb bulk)	6.25	7.75
Quarter Keg (6¼ lb bulk)	3.25	4.00
Case 24 (1 lb cans bulk)	14.00	17.00
Half case 12 (1 lb c. bk)	7.25	8.75

Presses—
Fruit, Wine and Jelly—
Enterprise Mfg. Co. ..... 20@25%
Seal Presses—
Morrill's No. 1, ℔ doz., $20.00 ..... 50%

Pruning Hooks and Shears
See *Shears.*

Pullers, Nail, Etc.—
Cyclops 50%
Elmore Tool Mfg. Co.:
Drop Forged Tack Pullers 10%
Nail Pullers 40%
Miller's Falls, No. 3, ℔ doz., $12.00.. 33⅓&10%
Morrill's No. 1, Nail Puller, ℔ doz. $20.00 ..... 50%
Pearson No. 1, Cyclone Spike Puller, each $30.00 ..... 50%
The Scranton Co., Case Lots:
No. 2B (large) $5.50
No. 3B (small) $5.00
Smith & Hemenway Co.:
Diamond B 70%
Giant 50%
Staple Pullers, Utica and Davison 60%
Taylor Mfg. Co., Sampson Tack, ℔ doz. $0.40

Pulleys, Single Wheel—

Inch	1½	1¾	2	3
Awning or Tackle, doz.	$0.30	.45	.60	1.05
Hay Fork, Swivel or Solid Eye. doz., ¼ in., $1.25; 5 in., $1.55				
Inch	2	2¼	2½	
Hot House, doz	$0.65	.85	1.20	
Inch	1¼	1½	1¾	2
Screw, doz.	$0.16	.19	.23	.30
Inch	1¾	2	2¼	2½
Slide, doz.	$0.25	.40	.55	.60
Inch	1½	1¾	2	2½

Sash Pulleys—
Common Frame; Square or Round End, per doz., 1¾ and 2 in ..... 17@20¢
Auger Mortise, no Face Plate, per doz., 1¾ and 2 in ....20@21¢

Acme, No. 35..1¾ in.. 19¢; 2 in., 20½¢
American Pulley Co.:
Wrought Steel American Plain Axle ..... 50&10%
Wrought Steel, Eagle, ℔ doz., 1¾ in., 17¢; 2 in., 21¢; 2¼ in. ..... 27¢
Top Notch, Electrically Welded, Nos. 3 and 4, ℔ doz. ..... 19¢
Common Sense ..... ℔ doz. 20¢
Merit ℔ doz., 2¼ in. ..... 37¢
Fox-All-Steel, Nos. 3 and 7, 2 in.... ℔ doz. 50%
Grand Rapids All Steel Noiseless..50%
Niagara, No. 25, 1¾ in., 19¢; 2 in. ..... 20½¢
No. 25 Troy..1¾ in., 14½¢; 2 in., 16½¢
Star, No. 26....1¾ in., 19¢; 2 in., 20½¢
Tackle Blocks—See Blocks.

Pumps—
Cistern 60%
Pitcher Spout ..... 75&10&5@80
Wood Pumps, Tubing, &c 50%
Barnes Dbl. Acting (low list) 50%
Barnes Pitcher Spout 80%
Contractors' Rubber Diaphragm, No. 2, B. & L. Block Co. $16.00
Daisy Spray Pump ..... ℔ doz. $6.50
Flint & Walling's Fast Mail Hand (low list) ..... 50&5%
Flint & Walling's Fast Mail (low list) ..... 50&5%
Flint & Walling's Tight Top Pitcher 50%
National Specialty Mfg. Co., Measuring, Nos. 2, $6.00; 3, $5.50 ..... 30%
Myers' Pumps (low list) } 50%
Myers' Power Pumps ..... }
Myers' Spray Pumps ..... }

Pump Leathers—
Plunger and Valve Leathers—Per gro.:

No.....	*1*	*2*	*3*	*4*
	$5.00	*6.00*	*7.00*	*8.00*

} 50@30&5%
Cup Leathers—Per 100:

Inch....	*2½*	*3*	*3½*	*4*
	$5.00	*7.00*	*9.00*	*12.00*

Punches—
Saddlers' or Drive, good, doz. ..... 50@75¢
Spring, single tube, good quality $1.75
Revolving (4 tubes) .... *doz.$3.50*
Bemis & Call Co.'s Cast St'l Drive. 50%
Elmore Tool Mfg. Co.:
Machinists' Center 40%
Tinners': Solid, 50%; Prick 50%
Morrill's Nos. 1AA, 1A, 1B, 1C, 1D, $15.00 ..... 50%
Hercules, 1 die, each $5.00 ..... 50%
Niagara Hollow Punches 40%
Niagara Solid Punches ..... 55&10%
Tinners' Hollow, P., S. & W. Co..40%
Tinners' Solid, P., S. & W. Co., ℔ doz., $1.44 ..... 40&10%

Rail—Barn Door, &c.—
Sliding Door, Painted Iron, 2½@2¾¢
Sliding Door, Wrought Brass, 1⅛ in., lb., 36¢ 30%
Cronk's:
Double Braced Steel Rail..℔ ft. 2¾¢
O. N. T. Rail ..... 2¾¢
Griffin's:
xxx, ℔ 100 ft., 1 x 3-16 in., $3.25; 1¼ x 3-16 in., $3.75.
Hinged Hanger, ℔ 100 ft., 1 x 3-16 in., $3.50; 1¼ x 3-16 in., $4.00.
Lane's:
Hinged Track, ℔ 100 ft. $3.45
O. N. T., ℔ 100 ft., 1 in., $3.12½; 1¼ in., $3.45; 1½ in., $4.00.
Standard, 1¼ in. ..... ℔ 100 ft. $4.00
Lawrence Bros.:
1 x 3-16 in., ℔ 100 ft., $7.50; 1¼ x 3-16 in., $8.75 ..... 55&7½%
Trolley, No. 301, ℔ ft. ..... 9¢
McKinney's:
Hinged Hanger Track, ℔ ft., 11¢ ..... 60&5%
1 x 3-16 Track ..... 55&7½%
Myers' Stayon Track ..... 60&5%
Richards Mfg. Co.:
Common, 1 x 3-16 in., $3.00; 1¼ x 3-16, $3.25; 1¼ x 3-16, $3.50.
Special Hinged Hanger Rail..60&10%
Lag Screw Rail, No. 65 ..... 50%
Gauge Trolley Track, ℔ ft., No. 31, 9¢; No. 32, 14¢; No. 33, 29¢.
No. 50 ..... 60&10%
Nos. 61, $3.00; 62, $3.25; 63, $3.50; 64, $4.00; 45, $3.25; 46, $3.50; 49, No. 1, $3.25; 49, No. 2, $3.50.

Rakes—
NOTE.—Many goods are sold at net prices.
American Fork & Hoe Co.:
Lawn, ℔ doz., No. 24, $2.50; No. 20 ..... $2.25
Cronk's:
Steel Garden: Champion, ℔ doz., 12-tooth, $3.75; 14-tooth, $4.00; 16-tooth, $4.25; Ideal, ℔ doz., 12-tooth, $3.00; 14-tooth, $3.30; 16-tooth, $3.60.
Victor, 12-tooth, $2.25; 14-tooth, $2.50; 16-tooth, $2.75.
Queen City Lawn, ℔ doz., 20 teeth, $2.85; 24, $3.00 ..... net
Anticlog Lawn, ℔ doz. $4.00
Malleable Garden ..... 70&10%
Ideal Steel Garden, ℔ doz., 12 teeth, $15.00; 14, $16.00; 16, $18.00 ..... 80%
Kohler's:
Jumbo Lawn, 36-tooth....℔ doz. $5.00
Lawn Queen, 20-tooth....℔ doz. $2.85
Lawn Queen, 24-tooth....℔ doz. $3.00
Paragon, 20-tooth ..... ℔ doz. $2.65
Paragon, 24-tooth ..... ℔ doz. $2.75
Steel Garden, 14-tooth....℔ doz. $2.40
Malleable Garden, 14-tooth, ℔ doz. $1.75@2.00

Rasps, Horse—
Disston's 75%
Heller Bros. ..... 70&5@70&10&5%
Liverlight Bros.' Gold Medal.70&10@75%
McCaffrey's American Standard ..... 60&10&5%
New Nicholson ..... 70&10@75%
See also Files.

Razors—
John Engstrom Swedish 45%
Sharp Shaver 60%
Fox Razors, ℔ doz., No. 42, $24.00; No. 44, $20.00; No. 82, Platina, $36.00. } Dis. 50%

Reels, Fishing—
Hendryx:
M 6, Q 6, A 6, B 6, M 9¼, M 16, Q 16, A 16, B 16, 4008, Rubber, Populo, Nickeled Populo 20%
Aluminum, German Silv., Bronze..25%
1240 N, 124 N 20%
3004 N, 06 N, 6 RM, G 9 ..... 25%
4 N, 6 PN, 24 N, 26 PN 20%
2904 P., 33⅓%; 2904 PN., 33⅓%; 0924 N., 33⅓%; 02084 N., 33⅓%; 002904 PN., 33⅓%; 802 N., 33⅓%; 986 PN, 2904 N, 974 PN 25%
5009 PN, 5009 N 20%
Competitor, 102 P, 102 PN, 202 P, 202 PN, 102 PR, 202 PR 20%
304 P, 304 PN, 00304 P, 00304 PN..33⅓%

Registers—*List July 1, 1903.*
Japanned, Electroplated and Bronzed 70%
White Porcelain Enamel..50&10%
Solid Brass or Bronze Metal..40%

Revolvers—
Single Action ..... $5@$1.00
Double Action, except 44 cal.$2.00
Double Action, 44 caliber...$2.00
Automatic $4.00
Hammerless $4.50

Riddles, Hardware Grade
16 in.....per doz.$2.50@$2.75
17 in.....per doz.$2.75@$3.00
18 in.....per doz.$3.00@$3.25

Rings and Ringers—
Bull Rings—

	2	2½	3 inch.
Steel	$0.70	0.75	0.80 doz.
Copper	$1.10	1.25	1.65 doz.

Hog Rings and Ringers—
Hill's Rings, per gro. boxes, $4.60@$4.75; per doz. boxes, 40@45¢
Hill's Ringers, Gray Iron, doz., 55@65¢
Hill's Ringers, Malleable Iron, doz. 85@95¢
Blair's Rings..per gro.$5.50@$6.00
Blair's Ringers..per doz.65@70¢

Rivets—
Copper Rivets and Burrs....50%
Tinners' and Miscellaneous Rivets ..... 80@80&10%

Bifurcated and Tubular—
Assorted in Boxes.
Bifurcated, per doz. boxes, pasteboard boxes, 50 count, —; Tin boxes, 100 count, —.
Tubular, per doz. boxes, 50 count, —; 100 count, —.

Rollers—
Cronk's Stay, No. 50 ..... $1.00
Cronk's Brinkerhoff No. 55, $0.60; No. 56, $0.75; No. 60 ..... $0.75
Lane's Stay 40%
Richards' Stay:
Handy Adj. and Reversible No. 53.75¢
O. K. Adj. and Reversible No. 58.50¢
Lag Screw, Nos. 55 and 57 ..... 50%
Underwriters', Nos. 59, 60 ..... 50%
Favorite, No. 54 ..... 60%

Rope—
Manila, 7-16 in. diam. and larger: Pure ..... lb. 8¼@8½¢
Sisal, 7-16 in. diam. and larger: Pure ..... lb. 6¾@7¢
Sisal, Hay, Hide and Bale Ropes, Medium and Coarse: Pure ..... lb. 7¼@7½¢
Sisal, Tarred, Medium Lath Yarn: Pure ..... lb. 6¼@6½¢
Cotton Rope:
Best, ¼-in. and larger. 16½@18¢
Medium, ¼-in. and larger.15@16¢
Common, ¼-in. and larger..7½¢
In coils, ½¢ advance.
Jute Rope:
Thread, No. 1, ¼-in. and up, lb. ..... 6½¢
Thread, No. 2, ¼-in. and up, lb. ..... 5¢

Wire Rope—
Galvanized ..... 37½&2½%
Plain ..... 45&2½%

Ropes, Hammock—
Covert Mfg. Co.:
Jute, 35%; Sisal 30%

Rules
Boxwood ..... 60@60&10%
Ivory ..... 35&10@35&10&5%
Chapin-Stephens Co.:
Boxwood 60%
Flexifold 40%
Ivory ..... 25@25&10%
Miscellaneous ..... 50@50&10%
Stephens' Combination 55%
Stationers' ..... 50@50&10%
Keuffel & Esser Co.:
Folding, Wood ..... 35&10%
Folding, Steel ..... 33⅓&10%
Lufkin's Steel ..... 50&10%
Lufkin's Lumber ..... 50&10%
Upson Nut Co.:
Boxwood ..... 60@60&10%
Ivory ..... 35&10@35&10&10%

Sash Balances—
See *Balance, Sash.*
Sash Locks—See *Locks, Sash.*
Sash Weights—
See *Weights, Sash.*

Sausage Stuffers or Fillers
See *Stuffers or Fillers, Sausage.*

Saw Frames—
See *Frames, Saw.*

Saw Sets—See *Sets, Saw.*

Saw Tools—See *Tools, Saw.*

Saws—
Atkins':
Circular 45%
Band ..... 50@50&10%
Butcher Saws 50%
Cross Cuts 35%
One-Man Cross Cut 40%
Narrow Cross Cut 50%
Hand, Rip and Panel ..... 35&5%
Miter Box and Compass 40%
Mulay, Mill and Drag 45%
Wood Saws ..... 40&10%
Chapin-Stephens Co.:
Turning Saws and Frames 30@30&10%
Diamond Saw & Stamping Works:
Sterling Kitchen Saws ..... 30&10&10%
Disston's:
Circular, Solid and Ins'ted Tooth 50%
Band, 2 to 18 in. wide 60%
Band, ⅛ to 1¾ 60%
Crosscuts 45%
Narrow Crosscuts 50%
Mulay, Mill and Drag 50%
Framed Woodsaws 25%
Woodsaw Blades 25%
Woodsaw Rods, Tinned 15%
Hand Saws, Nos. 12, 99, 9, 16, d100, D8, 120, 76, 77, 8 ..... 25%
Hand Saws, Nos. 7, 107, 107½, 3, 1, 0, 00, Combination 30%
Compass, Key Hole, &c 25%
Butcher Saws and Blades 30%
C. E. Jennings & Co.'s:
Back Saws 16⅔%
Butcher Saws ..... 25&7½%
Compass and Key Hole Saws, 33⅓&7½%
Framed Wood Saws ..... 25&7½%
Hand Saws 12½%
Wood Saw Blades ..... 33⅓&7½%
Millers Falls:
Butcher Saws ..... 15&10%
Star Saw Blades ..... 15&10%
Massachusetts Saw Works:
Victor Kitchen Saws ..... 40&10&50%
Butcher Saws Blades ..... 35@40%
Peace & Richardson's Hand Saws 30%
Simonds':
Circular Saws 45%
Crescent Ground Cross Cut Saws 30%
One-Man Cross Cuts ..... 40&10%
Gang Mill, Mulay and Drag Saws 45%
Band Saws 50%
Back Saws ..... 25@25&7½%
Butcher Saws ..... 35@35&7½%
Hand Saws ..... 25@25&7½%
Hand Saws, Bay State Brand 45%
Compass, Key Hole, &c ..... 25@25&7½%
Wood Saws ..... 40&7½%
Wheeler, Madden & Clemson Mfg. Co.'s Cross Cut Saws 50%

Hack Saw Blades and Frames—
Atkins' Hack Saw Blades A A A .. 25%
Disston's:
Concave Blades 25%
Keystone Blades 35%
Hack Saw Frames 30%
Simonds, 25%; The Best, 35%; Culley 35%
C. E. Jennings & Co.'s:
Hack Saw Frames, Nos. 175, 180 ..... 40&7½%
Hack Saws, Nos. 175, 180, complete, 40&7½%
Goodell's Hack Saw Blades ..... 40&10%
Griffin's Hack Saw Frames .. 35&5&10%
Griffin's Hack Saw Blades ..... 35&5&10%
Star Hack Saws and Blades ..... 15&10%
Sterling Hack Saw Blades .. 30&10&5%
Sterling Hack Saw Frames .. 30&10&10%
Sterling Power Hack Saw Machines, each, No. 1, $25.00; No. 2, $30.00 .. 10%
Victor Hack Saw Blades 20%
Victor Hack Saw Frames 40%
Whitaker Mfg. Co.:
National Hand Blades, Hand Frames, Power Blades 40%

Scroll—
Barnes, No. 7, $15 ..... 25%
Barnes' Scroll Saw Blades 40%
Barnes' Velocipede Power Scroll Saw, without boring attachment, $18; with boring attachment, $20 ..... 20%
Lester, complete, $10.00 ..... 15&10%
Rogers, complete, $3.50 and $4.00 .. 15&10%

Scales—
Union Platform, Plain $2.10@2.20
Union Platform, Stpd. $2.20@2.30
Chatillon's:
Eureka 25%
Favorite 40%
Grocers' Trip Scales 50%
The Standard Portables 40%
The Standard R. R. and Wag-

Scrapers—
Box, 1 Handle ..... doz. $1.85@2.10
Box, 2 Handle ..... doz. $2.35@2.50
Ship ... Light, $2.00; Heavy, $4.50
Chapin-Stephens Co., Box .. 30@30&10%
Richards Mfg. Co., Foot 60%

Screws—Bench and Hand
Bench, Iron, doz., 1 in., $2.50@2.75; 1½, $3.00@3.25; 1¼, $3.50@3.75
Bench, Wood ..... 20@20&10%
Hand, Wood .... 70&10@70&10&10%
Chapin-Stephens Co., Hand ..... 70@70&10&2½%

Coach, Lag and Hand Rail—
Lag, Cone Point ..... 80&5%
Coach, Gimlet Point 80%
Hand Rail ..... 70&10@75%

Jack Screws—
Standard List ..... 70&10@75%
Millers Falls ..... 50&10&10%
Swett Iron Works ..... 70@75%

Machine—
Cut Tread, Iron, Brass or Bronze:
Flat Head or Round Head, 50@50&10%
Fillister Head ..... 40@40&10%
Rolled Thread, F. H. or R. H., Iron ..... 75&10%
F. H. or R. H., Brass, Nos. 8 to 1½ ..... 65&10%

Set and Cap—
Set (Iron) ..... 75&10&7½%
Set (Steel), net advance over Iron 25%
Sq. Hd. Cap ..... 70&10&7½%
Hex. Hd. Cap ..... 70&10&7½%
Rd. Hd. Cap ..... 50&7½%
Fillister Hd. Cap ..... 60&7½%

Wood—
List July 23, 1903.
Flat Head, Iron .... 87½&5@.. %
Round Head, Iron .... 85&5@.. %
Flat Head, Brass .... 80&5@.. %
Round Head, Brass .. 77½&5@.. %
Flat Head, Bronze .... 75&5@.. %
Round Head, Bronze .. 72½&5@.. %
Drive Screws ..... 87½&5@.. %

Scroll Saws—
See *Saws, Scroll.*

Scythes—
Per doz.
Plain Grass, Cutting Edge Polished ..... $6.25@$6.50
Clipper, Bronzed Web .. $6.50@$6.75
Solid Steel, Web and Backs Polished ..... $7.00@$7.25
Bush, Weed and Bramble, Painted ..... $6.50@$6.75
Grain, Painted, Cutting Edge Polished ..... $8.25@$8.50
Clipper Grain, Bronze Web, $8.50@$8.75

Seeders, Raisin—
Enterprise ..... 25@30%

Sets— Awl and Tool—
Fray's Tool Handles, Nos. 1, $12; 2, $16; 3, $12 ..... 50%
Millers Falls Adj. Tool Handles, No. 1, $12; No. 4, $12; No. 5, $18 .. 20&10%

Garden Tool Sets—
American Fork & Hoe Co.:
Rake, Shovel and Hoe, ℔ doz. sets, No. 3 P F $7.25

Sets, Nail—
Octagon ..... gro. $3.50@3.75
Buck Bros. 47½%
Elmore Tool Mfg. Co. 30%
Mayhew's ..... ℔ gro. $9.00
Snell's Corrugated, Cup Pt. ..... 40&10%
Snell's Knurled, Cup Pt. ..... 40&10%
Victor Knurled, Cup Pt. ... ℔ gro. $7.50

Rivet—
Regular list ..... 75@75&10%

Saw—
Atkin's:
Criterion 40%
Adjustable 40%
Disston's Star, Monarch and Triumph 30%
Morrill's No. 1 ..... $15.00
Nos. 3 and 4, Cross Cut ... $20.60
No. 5, Mill $30.00
Nos. 10, 11, 95 ..... $15.60
No. 1 Old Style $10.00
Special $16.25
Giant Royal Cross Cut ... ℔ doz. $7.50
Royal, Hand ..... ℔ doz. $4.50
Taintor Positive ..... ℔ doz. $6.75

Shaving—
Fox Shaving Sets, No. 30 ..... ℔ doz., net, $24.00
Smith & Hemenway Co.'s 75%

Sharpeners, Knife—
Pike Mfg. Co.:
Fast Cut Pocket Knife Hones, ℔ doz. $1.50
Mounted Kitchen Sand Stone, ℔ doz. $1.50
Natural Grit Carving Knife Hones, ℔ doz. $3.00
Quick Cut Emery Carving Knife Hones, ℔ doz. $1.50
Quick Edge Pocket Knife Hones, ℔ doz. $2.50
} 50%

Skate—
Smith & Hemenway Co., Eureka .. 50%

Shaves, Spoke—
Iron ..... doz. $1.25
Wood ..... doz. $2.00
Bailey's (Stanley R. & L. Co.) 45%
Chapin-Stephens Co. ..... 30@30&10%
Goodell's, ℔ doz, $9.00 ..... 15&10%

Shears—
Cast Iron..	*7*	*8*	*9 in.*
Best	*$16.00*	*18.00*	*20.00 gro.*
Good	*$13.00*	*15.00*	*17.00 gro.*
Cheap	*$5.00*	*6.00*	*7.00 gro.*

Straight Trimmers, &c.:
Best quality Jap ..... 70&10&5%
Best Quality Nickel .. 60&10&5%
Tailors' Shears ..... 40@40&10%
Acme Cast Shears ..... 40@40&5%
W. H. Compton Shear Co.:
Japan Handles, Nickel Blades, 60&10&5%
Full Nickel ..... 50&10&5%
Heinisch's Tailor's Shears 10%
National Cutlery Co.'s Nickel Plated, 60&10%; Japan Handles ..... 70&10%
Columbian Cutlery Co.:
Sheep, 1900 list ..... 30&10&5%
Grass ..... 50&10%
Horse or Mule ..... 50&10%
J. Wiss & Sons Co.:
Best Quality Jap'd ..... 60&10%
Best Quality Nickeled ..... 50&10%
Tailors' 25%

Tinners' Snips—
Steel Blades ..... 20&5@20&10%
Steel Laid Blades ..... 50&10%
Acme Cast Snips ..... 40@45&5%
W. H. Compton Shear Co., Forged Steel Handles 35%
Forged Handles, Steel Blades, Berlin 50%
Heinisch's Snips 40%
Jennings & Griffin Mfg. Co.'s 6½ to 10 in. ..... 33⅓&7½%
National Cutlery Co.'s Forged Steel 50%
Niagara Snips 40%
P. S. & W. Forged Handles, 25%; W. R. W. 50%
J. Wiss & Sons Co.:
Wiss Forged Steel 25%

Pruning Shears—
W. H. Compton Shear Co., Dropped Forged Steel 35%
Cronk's Hand Shears 33⅓%
Cronk's Wood Handle Shears .. 33⅓%
Disston's Combined Pruning Hook and Saw, ℔ doz, $18.00 ..... 25%
Disston's Pruning Hook only, ℔ doz., $12.00 ..... 25%
J. T. Henry Mfg. Co.:
Pruning Shears, all grades 40%
P. S. & W. Co. ..... 40&10%
Columbian Cutlery Co.:
Hedge, Wilcut Brand ..... 60&10%
Lawn and Border, Wilcut Brand, 60&10%

Sheaves—Sliding Door—
Reading 40%
R. & E. list 15%

Sliding Shutter—
Reading list 40%
R. & E. list 15%

Shells—Shells, Empty—
Brass Shells, Empty:
Climax, 10 and 12 gauge ..... 60&5%
Club, Rival, 65&5%; First Quality, 60&5%
Paper Shells, Empty:
New Rapid, 10, 12, 16 and 20 gauge, 25&10%
Climax, 10 and 12 gauge; Acme and Magic, 10, 12, 16 and 20 gauge; Ideal, 10, 12, 16 and 20 gauge; Leader grade ..... 25&5%
Union, League, 10 and 12 gauge, Rival Grade 25%
New Climax, Defiance, 10, 12, 14, 16 and 20 gauge; Climax, 14, 16 and 20 gauge 20%
Challenge, Monarch, 10, 12, 16 and 20 gauge; League, Union, 14, 16 and 20 gauge; Repeater Grade .. 20%

Shells, Loaded—
Loaded with Black Powder .. 40%
Loaded with Smokeless Powder, medium grade ..... 40&5%
Loaded with Smokeless Powder, high grade ..... 40&10&10%
Union Metallic Cartridge Co.:
New Club, Black Powders 40%
Nitro Club, Smokeless Powders 40&5%
Arrow, Smokeless Powders 40&10&10%
Winchester:
Smokeless Repeater Grade ..... 40&5%
Smokeless Leader Grade ... 40&10&10%
Black Powder 40%

Shingles, Metal— Per Sq.
Edwards Mfg. Co.:

	Painted.	Galv.
14 x 20	$4.25	$6.00
10 x 14	4.50	6.25
7 x 10	4.75	6.50

Wheeling Corrugating Co.:

Dixie, 14 x 20 in.	$4.05	$5.05
Dixie, 10 x 14 in.	4.25	5.45
Dixie, 7 x 10 in.	5.25	6.70

Shoes, Horse, Mule, &c.—
F.o.b. Pittsburgh:
Iron ..... per keg. $4.10
Steel ..... per keg. $3.85
Burden's, all sizes ..... ℔ keg $3.90

Shot—
25-lb. bag.
Drop, up to B $1.70
Drop, B and larger 1.95
Buck 1.95
Chilled 1.95
Dust 2.30

Shovels and Spades—
Association List .. 40&7½%@40&10%
Avery Stamping Co. 40%

Snow Shovels—
Long Handle ..... $2.50@$2.75
Wood and Mall, D Handle. $2.65@$2.90

Sieves and Sifters—
Hunter's Imitation, gro $9.50
Hunter's Genuine, per gro .. $12.00

Sifters, Ash—
Acme Ball Bearing Sales Co., Acme Automatic Ash Sifter, each, $3.25; ℔ doz. $39.00

Sieves, Seamless Metallic
—Per dozen.—

Mesh	*14*	*16*	*18*	*20*
Iron Wire	*$1.05*	*1.05*	*1.10*	*1.20*
Tinned Wire	*$1.15*	*1.15*	*1.20*	*1.30*

Sieves, Wooden Rim—
Nested, 10, 11 and 12 Inch.
Mesh 18, Nested .... doz. $0.90@0.95
Mesh 20, Nested .... doz. $1.00@1.05
Mesh 24, Nested .... doz. $1.30@1.40

Sinks, Cast Iron—
Painted, Standard list:
12 x 12 to 22 x 36 in 60%
20 x 24 to 24 x 50 in 50%
24 x 60 to 24 x 120 in 30%
Barnes' low list 40%
NOTE.—There is not entire uniformity in lists used by jobbers.

Skeins, Wagon—
Cast Iron ..... 70@75&10%
Steel ..... 40@45%

Slates, School—
Factory Shipments.
"D" Slates ..... 50@50&10%
Eureka, Unexcelled Noiseless .. 60&7 tens.
Victor A, Noiseless .. 60&4 tens 45%

Slaw Cutters—See *Cutters.*

Snaps, Harness—
German ..... 40@40&10%
Covert Mfg. Co.:
Derby, 25%; Yankee, 30&2%; Yankee Roller, 30&2%
High Grade, 40%; Trojan 40%
Jockey 25%

Snaths—
Grass Scythe ..... 50@50&5%

Snips, Tinners—See *Shears.*

Spoons and Forks—
Silver Plated—
Good Quality ..... 50&10@60&5%
Cheap ..... 60@60&10%
International Silver Co:
1847 Rogers Bros. ..... 40&10%
Rogers & Bro., William Rogers' Eagle Brand ..... 50&10%
Anchor, Rogers Brand 60%
Wm. Rogers & Son ..... 60&10%

Miscellaneous
German Silver ..... 60@60&5%

Tinned Iron—
Teas ..... per gro. 50@55¢
Tables ..... per gro. $0.90@$1.00
Atlas Mfg. Co.:
Tea Spoons, ℔ gro. ..... 50¢@55¢
Table Spoons, ℔ gro. ..... $0.90@$1.00

Springs— Door—
Bardsley's Spring and Check 40%
Chicago (Coil) ..... 40&10%
Gem (Coil) 20%
Pullman Door and Gate 10%
Reliance (Coil) ..... 40&10%
Star (Coil) 35%
Torrey's Rod, 39 in. ..... ℔ doz. $1.00

Carriage, Wagon, &c.—
1¼ in. and Wider: Per 100 lb.
Black ..... $4.75@$5.00
Half Bright ..... $4.75@$5.00
Bright ..... $5.25@$5.50
Painted Seat Springs:
1½ x 2 x 26 .... per pair. 45@47¢
1½ x 3 x 28 .... per pair. 68@71¢

Sprinklers, Lawn—
American Foundry & Mfg. Co.:
Cactus, 65%; Japanese, 70%; National, ℔ doz. $12.00
Enterprise ..... 25@30%
Philadelphia No. 1, ℔ doz, $12; No. 2, $15; No. 3, $20 ..... 30%

Squares—
Nickel plated .. } List Jan. 5, 1900.
Steel and Iron . } 80@80&10%
Rosewood Hdl. Try Square and T-Bevels ..... 60&10&10@70%
Iron Hdl. Try Squares and T-Bevels ..... 40&10@40&10&10%
Disston's Try Squares and Bevels, Rosewood Handle, 60 & 10%; Iron Stock and Bevel 15%

Squeezers, Lemon
Wood, Porcelain Lined:
Cheap ..... doz. $1.00
Good Grade ..... doz. $1.25
Tinned Iron ..... doz. $0.75@1.00
Iron, Porcelain Lined ... doz. $1.75
Victor, ℔ gro. $9.00

Staples—
Barbed Blind ..... 85&5@85&10%
Electricians' ..... 80&10&10@85%
Fence Staples, Polished, $2.05; Galvanized $2.35
Poultry Netting Staples ..... per lb. 3¼@3½¢

Steels, Butchers'—
Dick's 30%
Foster Bros. 30%

Steelyards— .... 30@30&10%

Stocks and Dies—
Blacksmiths' ..... 50@50&10%
Curtis Rev'ble Ratchet Die Stock .. 25%
Derby Screw Plates 25%
Green River 25%
Lightning Screw Plate 25%
Little Giant 25%
Reece's New Screw Plate 25%

Stoners, Cherry—
Enterprise ..... 25@30%

Stones, Axe—
Pike Mfg. Co., Axe Stones (all kinds) 33⅓%

Glass Cutters' Stones—
Pike Mfg. Co., Glass Cutters' Stones and Supplies 40%

Stones, Oil, &c.—
Pike Mfg. Co., 1907 list: ℔ lb
Arkansas St. No. 1, 3 to 5½ in. $2.80
Arkansas St. No. 1, 5½ to 8 in. $3.50
Arkansas Slips No. 1 ..... $4.00
Lily White Washita, 4 to 8 in. 60¢
Rosy Red Washita, 4 to 8 in. 60¢
Washita St., Extra, 4 to 8 in. 50¢
Washita St., No. 1, 4 to 8 in. 40¢
Washita St., No. 2, 4 to 8 in. 25¢
Lily White Slips ..... 90¢
Rosy Red Slips ..... 90¢
Washita Slips, Extra ..... 80¢
Washita Slips, No. 1 ..... 70¢
Washita Slips, No. 2 ..... 40¢
India Oil Stones (entire list) ... 33⅓%
Quickcut Emery and Corundum Oil Stone, Double Grit 40%
Quickcut Emery and Corundum Axe Stone, Double Grit 33⅓%
Quickcut Emery Rubbing Bricks .. 40%
Hindostan No. 1, R'g'lar. ℔ lb 8¢
Hindostan No. 1, Small .. ℔ lb 10¢
Turkey Oil Stones, Extra, 5 to 9 in. ..... ℔ lb 80¢
Queer Creek Stones, 4 to 8 in. 20¢
Queer Creek Slips ..... 40¢
Sand Stone ..... 6¢
} 33⅓%

Scytne Stones—

Pike Mfg. Co., 1907 list:
Black Diamond S. S. ℔ gro. $12.00
Lamoille S. S. ℔ gro. $11.00
White Mountain S. S. ℔ gro. $9.50
Green Mountain S. S. ℔ gro. $7.00
Extra Indian Pond S. S. ℔ gro. $8.00
No. 1 Indian Pond S. S. ℔ gro. $7.50
No. 2 Indian Pond S. S. ℔ gro. $5.00
Leader Red End S. S. ℔ gro. $5.00
Quick Cut Emery.... ℔ gro. $10.00
Pure Corundum..... ℔ gro. $18.00
Crescent $7.00
Emery Scythe Rifles, 2 Coat. $8.80
Emery Scythe Rifles, 3 Coat. $11.00
Emery Scythe Rifles, 4 Coat. $13.20
Balance of 1907 list 33⅓%.
Lectro (Artificial), ℔ gro., $12.00 $12.00 ..... 33⅓%
Lightning (Artificial), ℔ gro., $18.00 ..... 33⅓%

Stoppers, Bottle—

Victor Bottle Stoppers..... ℔ gro. $9.00

Stops— Bench—

Millers Falls..... 15&10%
Morrill's, ℔ doz., No. 1, $10.00.... 50%
Morrill's, No. 2, $12.50..... 50%

Door—

Chapin-Stephens Co..... 50@50&10%

Plane—

Chapin-Stevens Co..... 20%

Straps— Box—

Acme Embossed, case lots.. 20&10&10%
Cary's Universal, case lots... 20&10&10%

Stretchers, Carpet—

Cast Iron, Steel Points.. doz. 55¢
All Steel Socket... doz. $2.00@2.25
Excelsior Stretcher and Tack Hammer Combined, ℔ doz., $6.00..... 20%

Stuffers, Sausage—

Enterprise Mfg. Co., Stuffers and Lard Presses..... 25@25&7½%
National Specialty Co., list Jan. 1, 1902 ..... 30&5%
P., S. & W. Co..... 40&10&5%

Sweepers, Carpet—

Goshen Sweeper Co.:	Per doz.
Gilt Edge	$27.00
Superfine	26.00
Majestic	24.00
Select, Nickeled	22.00

National Sweeper Co.:
National Queen, Nickeled..... $27.00
Martha Washington, Nickeled.. 25.00
Monarch, Japanned..... 20.00
Perpetual, Japanned..... 18.00
Streator Metal Stamping Co.:
Model E, Sanitaire..... $25.00
Eureka 15.00
Streator Majestic, Nickeled..... 24.00
Streator Conqueror, Japanned.. 22.00

NOTE.—Leading Manufacturers give the following rebates from list prices: 50c per dozen on three-dozen lots; $1 per dozen on five-dozen lots; $2 per dozen on ten dozen lots.

Tacks, Finishing Nails, &c.

American Carpet Tacks. 90&25@—%
American Cut Tacks.. 90&25@—%
Swedes' Cut Tacks. L.. 90&30@—%
Swedes' Upholsterers'. 90&35@—%
Gimp Tacks..... 90&35@—%
Lace Tacks..... 90&35@—%
Trimmers' Tacks..... 90&30@—%
Looking Glass Tacks..... 65@—%
Bill Posters' and Railroad Tacks, 90&10@—%
Hungarian Nails..... 80@—%
Finishing Nails..... 70@—%
Trunk and Clout Nails. 75&5@—%

NOTE.—The above prices are for Straight Weights.

Miscellaneous—

Double Pointed Tacks, 90&6 tens@—%
Se also Nails, Wire.

Tanks, Oil and Gasoline—

Wilson & Friend Co.:		
Gal.	Gasoline	Oil
50	$2.75	$3.00
60	$3.50	$4.00
110	$5.00	$5.75

Tapes, Measuring—

American Asses' Skin.... 50@—%
Patent Leather..... 25@30&5%
Steel ..... 33⅓&5%
Chesterman's ..... 25@35&5%
Keuffel & Esser Co.:
Favorite, Ass Skin..... 40&10@50%
Favorite, Duck and Leather..... 25&5@25&10%
Metallic and Steel, lower list, 35@35&5%; Pocket, 35@35&5%.
Lufkins:
Asses' Skin..... 40&10@50%
Metallic ..... 30@30&5%
Patent Bend, Leather... 25&5@25&10%
Pocket ..... 40@40&5%
Steel ..... 33⅓&5@35%
Wiebusch & Hilger:
Chesterman's Metallic, No. 34L, etc. 25%
Chesterman's Steel, No. 1038L, etc. 35%

Teeth, Harrow—

Steel Harrow Teeth, plain or headed, ⅝-inch and larger per 100 lb..... $2.55@$2.80

Thermometers—

Tin Case, Cabinet, Flange, Dairy, &c..... 30@35%

Ties, Bale—Steel Wire—

Single Loop..... 82½&10%
Monitor, Cross Head, &c. 70&6½&2½%

Tinners' Shears, &c.—

See *Shears, Tinners', &c.*

Tinware—

Stamped, Japanned and Pieced, sold very generally at net prices.

Tire Benders, Upsetters, &c.

See *Benders and Upsetters, Tire.*

Tools—Coopers'—

L. & I. J. White..... 20@20&5%

Haying—

Myers' Hay Tools..... 50%

Ice Tools—

Gifford-Wood Co..... 15%

Miniature—

Smith & Hemenway Co.'s, Davidson, ℔ doz., Nickel Plated, $1.50; Gold Plated..... $2.00

Saw—

Atkins' Cross Cut Saw Tools.... 35&5%
Simond's Improved..... 33⅓%
Simonds' Crescent..... 30%

Ship—

L. & I. J. White..... 25%

Torches—

Hammers, Engine, ℔ doz..... $4.50

Transom Lifters—

See *Lifters, Transom.*

Traps—Fly—

Balloon, Globe or Acme, doz., $1.15@$1.25; gro.... $11.50@12.00
Harper, Champion or Paragon, doz., $1.25@1.40; gro. $13.00@13.50

Game—

Imitation Oneida..... 75@10%
Newhouse ..... 50&5%
Hawley & Norton..... 65&10%
Victor ..... 75@75&10%
Oneida Community Jump..... 70&5%
Stop Thief..... 60%
Tree Trap..... 60%
Hector ..... 75@75&10%

Mouse and Rat—

Mouse, Wood, Choker, doz. holes, 12¢
Mouse, Round or Square Wire, doz. 85@90¢
Marty French Rat and Mouse Traps (Genuine), ℔ doz.:

	Crate lots.	Small lots.
No. 1, Rat.....	$11.50	$14.50
No. 3, Rat.....	$5.75	$6.50
No. 3½, Rat.....	$4.70	$5.25
No. 5, Mouse.....	$2.25	$3.00

Animal Trap Co.:
Out o' Sight, Mouse, ℔ doz.....$0.60
Out o' Sight, Rat, ℔ doz..... 1.20
Easy Set, Mouse, ℔ doz..... .35
Easy Set, Rat, ℔ doz..... .85
Out o' Sight Chockers, ℔ doz. holes ..... .12
Out o' Sight, Tin, 5-hole, ℔ doz. traps ..... .75

Trowels—

Disston Brick and Pointing..... 25%
Disston Plastering..... 20%
Disston "Standard Brand" and Garden Trowels..... 30%
Kohler's Steel Garden Trowels, ℔ gro., 5 in., $4.80; 6 in., $6.00.
Never-Break, Forged Steel Garden Trowels, in bulk, net ℔ gro. $5.50
In 1 doz. boxes..... ℔ gro. $6.00
Woodrough & McFarlin, Plastering. 25%

Trucks, Warehouse, &c.—

B. & L. Block Co.:
New York Pattern..... 50&10%
Western Pattern..... 60&10%
Handy Trucks..... ℔ doz. $16.00
Grocery ..... ℔ doz $15.00
McKinney Trucks..... each, net $10.00
Model Stove Trucks..... ℔ doz $18.50

Tubs, Wash—

M'f'gr's list, price per gross.

No.	0	1	2	3
Galvanized.	$67	$79	$91	$103

10&7½ &5&5%

Twine, Miscellaneous—

Flax Twine:
No. 9, ¼ and ½-lb. Balls. 21@23¢
No. 12, ¼ and ½-lb. Balls. 19@21¢
No. 18, ¼ and ½-lb. Balls. 16@18¢
No. 24, ¼ and ½-lb. Balls. 15½@17½¢
No. 36, ¼ and ½-lb. Balls. 15@17¢
Chalk Line, Cotton ½-lb. Balls ..... 24@29¢
Cotton Mops, 6, 9, 12 and 15 lb. to doz..... 8½@19¢
Cotton Wrapping, 5 Balls to lb.. according to quality.. 13½@19¢
American 2-Ply Hemp, ½ and ½-lb. Balls..... 15½@15¢
American 3-Ply Hemp, 1-lb Balls ..... 13½@16¢
India, 2-Ply Hemp, 1½-lb. Balls, Balls (Spring Twine)... 7½@9¢
India 3-Ply Hemp, 1-lb. Balls 7½@9¢
India 2-Ply Hemp, 1½-lb. Balls, 7@8½¢
2, 3, 4 and 5-Ply Jute, 1½-lb. Balls ..... 9@11¢
Mason Line, Linen, ½-lb. Bls. 47¢
No. 264 Mattress, ¼ and ½ lb. Balls, according to quality, 30@60¢
Wool, 3 to 6 ply.... B 6¢; A 7½¢

Vises—

Solid Box..... 60@60&10%

Parallel—

Athol Machine Co.:
Simpson's Adjustable..... 40%
Standard 40%
Amateur 25%
Columbian Hdw. Co., 40&5%:
Slide 65%
Fisher & Norris Double Screw, net, each Nos. 2 $10.50; 3, $16.00; 4, $22.50; 5, $27.00; 6, $32.00.
Fulton Mach. & Vise Co.:
F. & R. Double Swivel Machinists' 40%
Star, Solid Jaw, Machinists'..... 40%
Hollands':
Machinists' ..... 40@40&5%
Keystone ..... 65&5@70%
Lewis Tool Co.:
Adjustable Jaw..... 30%
Monarch, 50%; Solid Jaw..... 50%
Massey Vise Co.:
Clincher 40%
Parallel Bar..... 15%
Perfect, 15%; Lightning Grip..... 15%
Merrill's 25%
Millers Falls Oval Slide Pattern. 60&10%
Parker's:
Victor, 20@25%; Regulars.... 20@25%
Vulcan's ..... 40@45%
Combination Pipe..... 55@60%
Prentiss ..... 20@25%
Rock Island..... 25%
Snediker's X. L..... 33⅓%
Stephens' 33⅓%

Saw Filers

Disston's D 3 Clamp and Guide, ℔ doz., $24.00, 30%; Clamps..... 30%
Perfection Saw Clamps, ℔ doz.... $4.50
Reading 60%

Wood Workers—

Fulton Mach. & Vise Co.:
F. & R. Double Swivel Coachman's 40%
Star Solid Jaw Woodworkers'.... 60%
Massey Vise Co.:
Lightning Grip, 15%; Perfect.... 15%
Wyman & Gordon's Quick Action, 6 in., $6.00; 9 in., $7.00; 14 in., $8.00.

Miscellaneous—

Fulton Machine & Vise Co., Combination Pipe..... 70%
Holland's Combination Pipe.. 60@60&5%
Massey's Quick Action Pipe..... 40%
Parker's Combination Pipe:
87 Series, 60%; 187 Series, 60&5%; No. 870, 40%.
Rock Island Pipe..... 25%

Wads— *Price per M.*

B. E., 11 up..... 60¢
B. E., 9 and 10..... 70¢
B. E., 8..... 80¢
B. E., 7..... 80¢
P. E., 11 up..... $1.00
P. E., 9 and 10..... 1.25
P. E., 8..... 1.50
P. E., 7..... 1.50
Ely's B. E., 11 and larger. $1.70@1.75
Ely's P. E., 12 to 20.... $3.00@3.25

Dis. 15%

Ware, Hollow—

Cast Iron, Hollow—

Stove Hollow Ware:
Enameled ..... 45&10%
Ground ..... 50&5%
Plain or Unground..... 60%
Country Hollow Ware, per 100 lbs ..... $2.75@$3.00
White Enameled Ware:
Maslin Kettles..... 65&10%
Covered Wares:
Tinned and Turned..... 35&10%
Enameled ..... 45&10%
See also *Pots, Glue.*

Enameled—

Agate Nickel Steel Ware..... 33⅓%
El-an-ge ..... 60&10%
Iron Clad Ware..... 70&10%
Lava and Volcanic, Enameled.. 40&10%

Tea Kettles—

Galvanized Tea Kettles:

Inch	6	7	8	9
Each	45¢	50¢	55¢	65¢

Steel Hollow Ware—

Avery Stamping Co.:
Never-Break Spiders and Griddles ..... 65&10%
Steel Kettles, Maslins Scotch Bowls, Tin'd..... 60%
Steel Stew Pans, Stew Pots, etc., Porcelained 50%
Cleveland Stamping & Tool Co.:
Solid Steel Spiders and Griddles ..... 65&5%
Solid Steel Kettles..... 60&5%

Warmers, Foot—

Pike Mfg. Co., Soapstone.... 40@40&10%

Washboards—

No.	℔ doz.
800—Brass King, Single Surface, Open Back	$2.80
802—White Hen, Spiral Grimp Glass	$3.35
964—Royal Blue Enamel, Single Surface, Ventilated Back	$3.35
172—Our Best, Single Zinc, Soap Drainer	$3.35
722—Soap Saver, Single Zinc, Iron Top	$3.35
100—Northern Queen, Single Zinc, Perforated, Open Back	$3.00
134—Universal, Single Zinc, Extra Family Size, Ventilated Back	$2.80
760—Banner Globe, Single Zinc, Ventilated Back	$2.25
57—Peerless, Double Zinc, Spring Protector	$3.70
56—Red Cross, Double Zinc, Swing Protector	$3.60
17—North Star, Solid Zinc, Swing Protector	$3.60
797—Jewel, Single Zinc, Pail Size	$1.25
St. Louis Washboard Co. Ben Hur, Brass, Open Back	$2.50
Brass Key, Open Back	$2.75

Washers—Leather, Axle—

Solid ..... 90@90&10%
Patent ..... 90@90&5%
Coil: 7/8 1 1⅛ 1¼ inch.
9¢ 10¢ 11¢ 14¢ per box.

Iron or Steel—

Size bolt.... 5-16 ⅜ ½ ⅝ ¾
Washers.... $4.90 4.00 2.70 2.50 2.30
The above prices are based on $6.50 off list.

In lots less than one keg add ½¢ per lb.; 5-lb. boxes add ½¢ to list.
Avery Stamping Co.:
Standard, in 200 lb kegs, $6.00 ℔ 100 lb. discount; in 100 lb kegs add 10¢ net ℔ 100 lb; in 5 or 10 lb boxes, add 50¢ net ℔ 100 lb; in 1 lb boxes, add $1.00 net ℔ 100 lb.

Cast Washers—

Over ½-inch, barrel lots, per lb. 1½@1¾¢

Wedges—

Oil Finish..... lb., 2¼@2¾¢

Weights—Hitching—

Covert Mfg. Co..... 30&2%

Sash—

Per net ton..... $19.50@$21.00

Wheels, Corundum and Emery—

Pike Mfg. Co., Corundum, 65%; Emery 75%

Well—

8-in., $2.00; 10-in., $2.30; 12-in., $3.00; 14-in., $4.45.

Wire and Wire Goods—

Bright and Annealed:
6 to 9..... 72½&10&7½%
10 to 18..... 72½&10&10%
19 to 26..... 75&10&10&2½%
27 to 36..... 77½&7½%
Galvanized:
6 to 9..... 72½&10%
10 to 14..... 72½&10&5%
15 to 16..... 72½&10&5%
17 to 18..... 72½%
19 to 26..... 70&5&2½%
27 to 36..... 65&10&10%
Coppered:
6 to 9..... 65&10&10%
10 to 14..... 70&10&5%
15 to 18..... 65&10&10&10%
19 to 26..... 70&5&2½%
27 to 36..... 72½&10&2½%
Tinned:
6 to 18..... 67&10&10%
Brass..... 15¾¢ lb., base
Copper..... 15¼¢ lb., base
Cast Steel Wire..... 50%

Spooled Wire—

Annealed and Tinned. 75@75&10%
Brass and Copper.... 70@70&10%
Retailers' Assortments, per box, $1.90@$2.10
Wire Clothes Line, See Lines.
Wire Picture Cord, see Cord.

Bright Wire Goods—

Steel Wire Goods..... 90&10%
Brass Wire Goods..... 90&10%
Brass Cup and Shoulder Hooks, 85%

Wire Cloth and Netting—

Galvanized Poultry Netting, 80&10@80&10&5%
Screen Cloth, 12 Mesh, Per 100 sq. ft.; Painted, $1.35; Galvanized, $1.95; 14 Mesh, Bronze $6.50.
Standard Galv. Hardware Grade: 100 ft. rolls, 2½ to 48 in. wide, Per 100 sq. ft.
Nos. 2, 2½ and 3 Mesh.... $2.75
Nos. 4 and 5 Mesh..... $3.00
No. 6 Mesh..... $3.25
Nos. 7 and 8 Mesh..... $3.75

Wire, Barb—See *Trade Report*

Wrenches—

Agricultural .... 80&10@80&10&5%
Alligator or Crocodile. 70&10@75%
Baxter Pattern S Wrenches, 70&5@70&10%
Drop Forged S..... 45@45&5%
Acme ..... 60&10%
Alligator Pattern, 70%; Bull Dog. 70%
Bemis & Call's:
Adjustable S, 40&5%; Adjustable S Pipe, 40&5%; Briggs Pattern, 40%; Combination Bright, 50%.
Steel Handle Nut..... 50&5%
Combination Black..... 50&5%
Merrick Pattern..... 50&5%
Boardman's 40%
Coes' Genuine Knife Hdl... 40&10&5&5%
Coes' Genuine Steel Hdl... 40&10&5&5%
Coes' Genuine Key Model.. 40&10&5&5%
Coes' Genuine Hammer Handle..... 40&10&5&5%
Coes' "Mechanics'"... 40&10&10&5&5%
Donohue's Engineer..... 40&10%
Eagle 70%
Gem Pocket..... 30%
Hercules 70%
W. & B. Machinist:
Case lots..... 50&10%
Less than case lots..... 50%
W. & B. Railroad Special:
Case lots..... 50%
Less than case lots..... 40&10&5%
Solid Handles, P., S. & W.. 50&10%; full cases..... 50&10&5%
Standard Nipple Mfg. Co.:
Duplex Chain..... 50%
Uwanta Wrench Co.:
Uwanta Special, Iron Handle..... 40&10&5%
Other Wrenches..... 50%
Vulcan and Agrippa Chain..... 50%
Whitaker Machinists'..... 50&10%
Wizard Adjustable Ratchet..... 50%

Fruit Jar—

Benj. P. Forbes, Triumph, ℔ gro., $7.50; per doz..... $0.90

Wrought Goods—

Staple Hooks, &c., list March 17, '92..... 90@—%

Zinc— *(Cask lots at mill.)*

Sheet..... per 100 lb., $7.00